

DRAFT

**SAFETY, HEALTH, AND
EMERGENCY RESPONSE PLAN
SITE-SPECIFIC ENVIRONMENTAL
BASELINE SURVEY
ST. LOUIS ARMY AMMUNITION
PLANT
ST. LOUIS, MISSOURI
CONTRACT NO. DACW41-96-D-8014
TASK ORDER 0019**

Prepared for
Department of the Army
U.S. Army Engineer District
Kansas City District
Corps of Engineers
Kansas City, Missouri

August 2001

URS

URS Corporation
10975 EL MONTE, SUITE 100
OVERLAND PARK, KANSAS 66211

Project No. 49-F0K96219.01



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HEALTH AND SAFETY PLAN

PHONE

Project Number:	49-F0K96219.01	
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Preparation Date:	August 17, 2001	
Expiration Date:	August 31, 2002	

APPROVALS

Regional Health and Safety Manager:

(DATE)

Project Manager:

(DATE)

This Health and Safety Plan is valid only for this specific project as described in Section 3.0. It is not to be used for other projects or subsequent phases of this project without the written approval of the Regional Health and Safety Manager. A copy of this plan is to be maintained at the site at all times.

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ATTACHMENTS

ATTACHMENT A	URS SAFETY MANAGEMENT STANDARDS
ATTACHMENT B	SAFETY PLAN DOCUMENTATION
ATTACHMENT C	MATERIAL SAFETY DATA SHEETS

GLOSSARY OF TERMS, ACRONYMS, AND ABBREVIATIONS

ACGIH	American Conference of Governmental Industrial Hygienists
analyzer	refers to the field instrument described in Section 6.1
atm	atmosphere
EC	centigrade
Carcinogen	a substance that can cause cancer
cc	cubic centimeter
CGI	Combustible Gas Indicator
CNS	Central Nervous System
eV	Electron Volts
EF	Fahrenheit
HSP	Health and Safety Plan
IDW	Investigation Derived Waste
kg	kilogram
LEL	Lower Explosive Limit
Lpm	liters per minute
MSDS	Material Safety Data Sheet
m	meter
mg	milligram
mg/M ³	milligrams per cubic meter
ml	milliliter
mm	millimeter
ND	not detected
NIOSH	National Institute for Occupational Safety and Health
OBZ	operator's breathing zone
OEL	occupational exposure limit
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PID	Photoionization Detector
PM	project manager
ppb	parts per billion
ppm	parts per million
REL	Recommended Exposure Limit
RHSM	Regional Health and Safety Manager
SMS	Safety Management Standard
SSO	Site Safety Officer
SSR	Subcontractor's Safety Representative
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
UEL	Upper Explosive Limit
URS	URS Corporation and Subsidiaries
VOC	Volatile Organic Compound

1.0 PLAN-AT-A-GLANCE HSP SUMMARY SHEET

THIS SUMMARY SHEET IS PROVIDED AS A QUICK-REFERENCE/OVERVIEW ONLY. THE REMAINDER OF THIS SITE-SPECIFIC HSP IS INTEGRAL TO THE SAFE CONDUCT OF SITE OPERATIONS AND MUST BE APPLIED IN ITS ENTIRETY.

EMERGENCY INFORMATION

Ambulance:	911
Fire - St. Louis Fire Department:	911 or 314-622-4000 (non-emergency)
Police - St. Louis PD:	911 or 314-444-5555 (non-emergency)
Hospital - Normandy Community Hospital:	314-382-6400
Project Manager:	913-344-1158
Health and Safety Representative:	913-344-1021
Regional Health and Safety Manager:	913-344-1021
Alternates:	To Be Determined
National Response Center:	(800) 424-8802

HOSPITAL DIRECTIONS:

To reach the hospital from the site:

Travel 0.9 miles south on Goodfellow Boulevard to Natural Bridge Avenue
Turn right (northwest) onto Natural Bridge Avenue
Travel 2.6 miles along Natural Bridge Avenue/Natural Bridge Road (SR 115)
Normandy Community Hospital is located at 7840 Natural Bridge Road

Additional information concerning emergency procedures is located in Section 11.0 and the hospital route map is located in Attachment A. A copy of the hospital route map must be readily available in each site vehicle that may be used to transport accident victims to the hospital.

CONSTITUENTS OF CONCERN:

1. polychlorinated biphenyls (PCBs)
2. silica
3. pesticides
4. asbestos
5. No. 6 fuel oil
6. total petroleum hydrocarbons (TPH)
7. polynuclear aromatic hydrocarbons (PAHs)
8. metals
9. DNT

Additional information regarding site history, constituents of concern, and scope of work activities is located in sections 2.0 and 5.0.

PROJECT HAZARD ANALYSIS

Task	Chem. Hzds.	Heat/Cold Stress	Noise	Slip/Trip/Fall	Lifting Hzds.	Mech'l. Hzds.	Electro-cution	Explosion	Excav-ation
1. Site Reconnaissance	Low	Low	Low	Med	Low	Low	Low	N/A	N/A
2. Soil Borings	Med	Low	Med	Med	Low	Med	Low	N/A	N/A
3. Concrete Cutting/Boring	Med	Low	High	Med	Low	High	Low	N/A	N/A
4. Wipe Sampling	High	Low	Low	Med	Low	Low	Low	N/A	N/A
5. Sediment Sampling	Med	Low	Low	Med	Med	Low	Low	Med	N/A
6. Wastewater Sampling	Med	Low	Low	Med	Low	Low	Low	Med	N/A
7. ACM Sampling	Low	Low	Low	Med	Med	Low	Low	N/A	Low
8. Sewer System Survey	Med	Low	Low	Med	Med	Med	Low	Med	N/A
9. Test Pit Excavation	Med	Low	High	High	Low	High	Med	Med	High

High - Exposure likely more than 50% of the time

Low - Exposure likely less than 10% of the time

Med - Exposure likely 10-50% of the time

n/a - Exposure not anticipated

Additional information concerning Project Hazards and their control can be found in Section 5.0.

TASK MINIMUM PROTECTIVE CLOTHING/EQUIPMENT REQUIREMENTS

1	Steel-toed boots, nitrile gloves when handling potentially contaminated materials.
2	Steel-toed boots, hard hat, safety glasses, work gloves, nitrile gloves when handling potentially contaminated materials, and samples.
3	Steel-toed boots, hard hat, safety glasses, hearing protection, work gloves, nitrile gloves when handling potentially contaminated materials and samples; dust mask/APR and disposal coverall.
4	Steel-toed boots, nitrile gloves when handling potentially contaminated materials and samples.
5	Steel-toed boots, nitrile gloves when handling potentially contaminated materials and samples, disposable coverall.
6	Steel-toed boots, nitrile gloves when handling potentially contaminated materials and samples, disposable coverall.
7	Steel-toed boots, nitrile gloves when handling potentially contaminated materials and samples.
8	Steel-toed boots, nitrile gloves when handling potentially contaminated materials and samples.
9	Steel-toed boots, hard hat, safety glasses, hearing protection, work gloves, nitrile gloves when handling potentially contaminated materials and samples.

PROTECTIVE CLOTHING (First Action Level)

Chemical Protective Clothing

Outer Coveralls: Kleenguard® or Tyvek®‡

Outer Gloves: Nitrile

Inner Gloves: Surgical Nitriles

Chemical protective steel-toed boots or chemical-resistant boot covers over steel-toed boots

‡ Substitute poly-Coated Tyvek® if there is a potential for contact with liquids (groundwater, mud, etc.)

The HSP Preparer has conducted a Hazard Assessment for this project based upon information provided by the Project Manager, in accordance with 29 CFR 1910.132(d).

For more information on PPE and respiratory protection requirements, see the Action Levels table (Page 4) and Section 7.0.

ENGINEERING CONTROLS TO BE USED (as applicable)

- Water spray for dust suppression
- Natural wind forces to reduce exposure to airborne contaminants
- Forced air ventilation (fans) to reduce potential airborne exposures
- Light colored PPE to reduce solar load for heat stress control
- Dining canopy to provide shaded work/rest area for heat stress control

For more information, see Section 5.0

INSTRUMENTATION TO BE USED

☐ HNu PID w/ ☐ eV probe
☐ OVM PID w/ ☐ eV lamp
☐ Photovac Microtip PID w/ ☐ eV lamp
☐ MiniRAE PID w/ ☐ eV lamp
☒ Combustible Gas/O₂ Indicator
☐ Foxboro OVA (FID)
☒ Miniram Real-time Dust Monitor
☐ Other

For more information, see Section 6.0

PERSONAL EXPOSURE SAMPLING

☐ Will be conducted
☒ Will be conducted if dust readings require the use of respiratory protection as described in the Action Level Table (page 4) and in Section 6.1.1
☐ Is not anticipated

For more information on Monitoring, see Section 6.0

HAZ-COM MATERIALS INVENTORY

- TSP or Alconox (decontamination)
- Isobutylene (calibration gas)
- Nitric Acid (sample preservative)
- Hydrochloric Acid (sample preservative)
- Hexane (decontamination)
- Methane (calibration gas)
- Sulfuric Acid (sample preservative)
- Gasoline (equipment fuel)

ACTION LEVELS (for dust monitor)

Analyzer Reading*	Location	Duration	Action	Personal Protective Equipment
<1 mg/m ³	Point of Operations/Release Source point	-----	Continued periodic monitoring	Minimum site ensemble
≥ 1 mg/m ³ (1 st Action Level)	Point of Operations/Release Source point	> 1 minute	Monitor OBZ: don protective clothing; establish work zones as described in Section 8.1	Minimum Site Ensemble. PLUS: Tyvek [®] coveralls [‡] , Nitrile Outer Gloves, and Nitrile Inner (surgical) gloves
≥ 2 mg/m ³ (2 nd Action Level)	OBZ	> 1 minute	Provide respiratory protection; Contact the RHSM to perform personal monitoring as described in Section 6.1.1	Add air purifying respirators with P100 cartridges
≥10 mg/m ³ OR 50 mg/m ³	OBZ OBZ	>1 minute instantaneous	Stop work: move upwind while dust dissipates. If elevated levels remain, cover boring and cuttings, evacuate upwind and notify RHSM or PM.	As specified by RHSM

*above background readings

(OBZ= Operator's Breathing Zone)

‡Substitute poly-coated Tyvek[®] if there is potential for contact with liquids (groundwater, mud, etc)

ACTION LEVELS (for the Combustible Gas Indicator)

LEL Reading	Location	Action
<10% LEL	Point of Operations/General Work Area	Continue site operations and continue periodic monitoring
10-20% LEL	Point of Operations/General Work Area	Continue site operations and perform continuous monitoring
>20% LEL	Point of Operations/General Work Area	Shutdown operations, evaluate source, ventilate work area

LEL = Lower Explosive Limit

For additional information on Action Levels and their implementation, see Sections 6.0 and 7.0

HEALTH AND SAFETY EQUIPMENT LIST

Required Recommended

<input checked="" type="checkbox"/>	<input type="checkbox"/>	URS Safety Management Standards (relevant to project - see next page)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	OSHA "Safety on the Job" Posters
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Hardhats
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Safety glasses
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ear plugs or muffs
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cotton coveralls
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Traffic safety vest
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Tyvek® coveralls
<input type="checkbox"/>	<input type="checkbox"/>	Polycoated Tyvek® Q-23 Coveralls
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Steel-toed boots
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Chemical-resistant steel-toed boots or chemical-resistant boot covers
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Work gloves
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Nitrile outer gloves
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Surgical nitrile inner gloves
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Plastic sheeting (visqueen)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	55 gallon 17-H drums (for contaminated solids)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	55 gallon 17-E drums (for liquids)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Drum liners
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Barricade tape and barricades
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Wash tubs and scrub brushes
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Decon solution (i.e., TSP)
<input type="checkbox"/>	<input type="checkbox"/>	Folding chairs
<input checked="" type="checkbox"/>	<input type="checkbox"/>	5 or 10 gallon portable eyewash or equivalent
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Respirator sanitizing equipment
<input checked="" type="checkbox"/>	<input type="checkbox"/>	First Aid kit
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Infection control kit
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Drinking water
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Gatorade or similar drink
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Type ABC fire extinguishers
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Half-face respirators (NIOSH approved)
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Full-face respirators (NIOSH approved)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Respirator cartridges (P100)
<input type="checkbox"/>	<input type="checkbox"/>	Photoionization Detector (PID) w/[] lamp and calibration kit
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Combustible Gas Indicator and calibration kit
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Garden sprayer
<input type="checkbox"/>	<input type="checkbox"/>	Compressed gas horn
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Duct tape
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Paper towels and hand soap
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Spill sorbent
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Plastic garbage bags
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Broom and/or shovel

SAFETY MANAGEMENT STANDARDS APPLICABLE TO THIS HSP

SMS	TOPIC
2	Worker Right to Know
10	Confined Space Entry
13	Excavation Safety
14	Fire Prevention
16	Hand Tools and Portable Equipment
18	Heat Stress
19	Heavy Equipment Operations
21	Housekeeping
23	Lockout and Tagout Safety
26	Noise and Hearing Conservation
29	Personal Protective Equipment
30	Sanitation
32	Traffic Control
34	Utility Clearances
42	Respiratory Protection
43	Personal Monitoring (Industrial Hygiene)
45	Back Injury Prevention
46	Subcontractor Health and Safety Requirements
48	DOT Shipping
49	Incident Reporting
51	Bloodborne Pathogens
56	Drilling Safety
57	Vehicle Safety

Copies of Safety Management Standards are available on the URS Safety Intranet at health and safety/ or 10.1.5.21 (internal access only). Use the "Print This SMS" function on the "Safety Management Standards" page to print the complete SMS.

Copies of the SMSs referenced by this HSP are to be maintained on site. Project Managers are responsible to see that other SMSs relevant to field activities but not directly referenced by this HSP are also available on site.

2.0 FACILITY BACKGROUND/WORK PLAN

2.1 SITE HISTORY

The following table outlines the physical features and operational history of the St. Louis Army Ammunition Plant.

**Table 2-1
Summary of Physical Features of the Site**

Building Characteristics	
Buildings	Originally 11 primary buildings, 9 still remaining
Style	Single and multi-story buildings, some with basements and/or penthouses
Construction Materials	Steel frame buildings with masonry and/or transite exteriors
Construction Date	Site construction began in 1941.

Historical Use	
Occupants/Lessees	1941 to 1944: SLOP (0.30-caliber munitions production) 1944 to 1984: SLAAP (105-millimeter (mm) Howitzer shell production – intermittent production) 1985 to 1996: SLAAP (AVSCOM office space)
Operational Periods	1941 to 1944: 0.30-caliber munitions production 1944 to 1945: 105-mm Howitzer shell production 1952 to 1954: 105-mm Howitzer shell production 1966 to 1969: 105-mm Howitzer shell production 1985 to 1996: Office space
Historical Processes	
Process Description	Raw metals, propellants, and primer were all received by the facility and assembled into munitions. The process involved cutting and shaping the raw metals into shell casings, then filling the casings with both primer and propellant. Techniques used included the breaking of raw metal rods, heating and reshaping of the metal into casings, grinding and polishing of the casings, and transport of the propellant and primer to an assembly line where they were added to the casings.
Process Machinery	Process machinery included lathes, drill presses, milling machines, grinders, heat-treating furnaces, wash racks, welders, shapers, shot-blasting equipment, paint spray booths, transformers, air compressors, and auxiliary equipment (dust collection devices, elevators, and conveyors).
Process Utilities	Process utilities included water, steam, compressed air, soluble oil, quench oil, paint, natural gas, telephone service, and electricity.
Hazardous Material Information	
Possible Hazardous Material Used	Cutting (soluble) oil*, quench oil (No. 6 fuel oil), hydraulic oil, solvents (toluene), asbestos, lead-based paint, pesticides, and PCBs.

2.2 PURPOSE AND SCOPE OF WORK

The SLAPP field investigation includes the following field tasks:

- Sample Layout and Utility Clearance
- Soil Borings and Sampling
- Wastewater and Sediment Sampling
- Concrete Floor Sampling
- Test Pit and Test Trench Excavation and Sampling
- Wipe Sampling
- Video Surveying of Sanitary Sewers
- Refractory Brick Sampling
- Investigation Derived Waste (IDW)

2.2.1 SITE MANAGEMENT

This activity involves the management of field activities and field personnel at the site. It includes such tasks as general office work, receipt of deliveries, shipments of samples and equipment, communications, field work documentation, maintaining equipment and supplies, etc.

2.2.2 INVESTIGATION PREPARATION ACTIVITIES

Utility clearances, site surveying and sample layout will be conducted at the beginning of field activities and may be conducted later if needed. Both are non-intrusive activities that present minimal hazards to field personnel.

2.2.3 SOIL BORINGS

Soil borings will be advanced at selected locations to investigate areas of suspected contamination. Soil sampling will be conducted with a drill rig, Geoprobe[®] unit, or similar sampling unit. In areas not accessible to a rig, the borings will be advanced with a hand auger. Soil samples will be collected at multiple depth intervals up to 10 feet below ground surface and submitted for analysis. The soil borings are a noise and struck-by hazard for field personnel.

In the event that buried obstructions are encountered during drilling, the borings will be terminated at the depth the obstruction is encountered. In the event conditions do not allow for the collection of a soil sample, the sample location will be moved and the new location documented in the field log book.

2.2.4 WASTEWATER AND SEDIMENT SAMPLING

Wastewater and sediment samples will be collected from the interior of sewer manholes. Wastewater samples will be collected by a PVC pipe with a bottle sampler attached to one end. Sediment samples will be collected with a scoop or towel at the end of a PVC pipe, a hand auger, a small barrel drive sampler, or a clam shell sampler. At no time will sampling personnel be required to enter the sewer system. Sediment samples will also be collected from shallow trenches and ventilation systems.

2.2.5 CONCRETE FLOOR SAMPLING

Concrete samples will be collected by coring the concrete with a concrete core sampler at least 1 inch in diameter. Samples will then be saw-cut from the core with at depth intervals of 0-1 inches and 2-3 inches. Dust and noise will both be hazards during the collection of concrete samples.

2.2.6 TEST PITS

Test pits will be excavated at locations within and adjacent to site buildings. The excavations will be made with a backhoe, and samples will be collected from the spoil pile adjacent to the excavation or directly from the backhoe bucket. Test pits within a building may require the removal of concrete with a ram-hoe attachment to expose the underlying soils. The test pits are a struck-by, noise and excavation hazard for field personnel.

2.2.7 WIPE SAMPLES

Wipe samples will be collected within a disposable 1 ft² (or 100 cm² for PCBs) template by a wipe media to be specified by the laboratory. Some of the wipe samples to be collected will require field personnel to enter confined spaces.

2.2.8 SANITARY SEWER SURVEY

The sewer system at the site will be surveyed with closed-circuit television equipment in order to identify breaches in the system. The equipment to be used will be explosion-proof, submersible and either pulled by a winch or self powered. At no time will field personnel be required to enter the sewer system.

2.2.9 BRICK SAMPLING

Refractory bricks will be collected from furnace rings in Building 2. The bricks will be collected from debris within each pit and submitted for asbestos analysis. The movement of debris to expose refractory bricks presents a potential lifting hazard for field personnel.

2.2.10 IDW SAMPLING

Containerized decontamination fluids will be sampled for characterization and proper disposal of the waste. Samples will be collected from the fluid containers with a bottle sampler, then the bottle sampler will be used to fill the sample containers.

3.0 APPLICABILITY

The purpose of this plan, which was developed specifically for operations at the St. Louis Army Ammunition Plant in St. Louis, Missouri, is to assign responsibilities, establish personal protection standards and mandatory safety procedures, and provide for contingencies that may arise while operations are being conducted at the site. This plan complies with, but does not replace, Federal Health and Safety Regulations as set forth in 29 CFR 1910 and 1926, and applicable state regulations. This plan is to be used by URS personnel as a supplement to such rules, regulations, and guidance. This health and safety plan is to be augmented by the URS Health and Safety Program and Management System, relevant standards from which are required to be available on site during all activities.

The provisions of the plan are mandatory for all onsite URS employees and URS subcontractors engaged in hazardous material management activities associated with this project which may involve health and safety hazards.

Changing and/or unanticipated site conditions may require modification of this site safety plan in order to maintain a safe and healthful work environment. Any proposed changes to this plan should be reviewed with an URS Health and Safety Professional prior to their implementation. If this is not feasible, the site/project manager may modify the plan and record all changes in the field log book; under no circumstances will modifications to this plan conflict with Federal, state, or other governmental health and safety regulations.

URS is providing a copy of this Health and Safety Plan to each site subcontractor in order to fulfill its obligation under 29 CFR 1910.120(b) to inform subcontractors of site hazards. Each subcontractor is to following the URS safety plan or provide a health and safety plan that complies with 29 CFR 1910.120 and addresses the activities of its employees relative to this project.

This Health and Safety Plan, and each of its provisions, is applicable only to, and for use only by, URS Corporation, its affiliates, and its subcontractors. Any use of this Plan by other parties, including, without limitation, third party contractors on projects where URS is providing engineering, construction management or similar services, without the express written permission of URS, will be at that party's sole risk, and URS Corporation shall have no responsibility therefor. The existence and use of this Plan by URS shall not be deemed an admission or evidence of any acceptance of any safety responsibility by URS for other parties unless such responsibility is expressly assumed in writing by URS in a specific project contract.

4.0 RESPONSIBILITIES

URS will have site safety and health oversight and coordination responsibilities for URS personnel; each subcontractor will be held accountable for the safe and healthful performance of work by each of their employees, subcontractors, or support personnel who may enter the site.

URS will strictly adhere to the provisions of this health and safety plan, along with the applicable regulations issued by governmental entities.

4.1 PROJECT MANAGER (URS)

The Project Manager (PM) shall direct URS onsite operations. The PM may delegate all or part of these duties to a properly qualified URS employee who is designated as the Site Manager. At the site, the PM, assisted by the Site Safety Officer (SSO), has primary responsibility for:

1. Seeing that appropriate personal protective equipment and monitoring equipment is available and properly utilized by all onsite URS employees.
2. Establishing that URS personnel are aware of the provisions of this plan, are instructed in the work practices necessary to ensure safety, and are familiar with planned procedures for dealing with emergencies.
3. Establishing that all URS onsite personnel have completed a minimum of 40 hours of health and safety training and have appropriate medical clearance as required by 29 CFR 1910.120, and have been fit tested for the appropriate respirators.
4. Seeing that URS personnel are aware of the potential hazards associated with site operations.
5. Monitoring the safety performance of all URS personnel to see that the required work practices are employed.
6. Correcting any URS work practices or conditions that may result in injury or exposure to hazardous substances.
7. Preparing any accident/incident reports for URS activities (see Section 12.6).
8. Seeing to the completion of Plan Compliance Agreements by URS personnel (See Attachment B).
9. Halting URS site operations, if necessary, in the even of an emergency or to correct unsafe work practices.
10. Seeing that utility clearances are obtained prior to the commencement of work (see Section 5.2.7).

11. Seeing that the appropriate Safety Management Standards are appended to this HSP and are available on site (see "Plan at a Glance").
12. Reviewing and approving this project health and safety plan.

4.2 SITE SAFETY OFFICER (URS)

The Site Safety Officer's (SSO) duties may be carried out by the PM or other qualified URS site manager. The SSO is responsible for:

1. Implementing project Health and Safety Plans, and reporting any deviations from the anticipated conditions described in the plan to the PM, and, if necessary, the RHSM.
2. Determining that monitoring equipment is used properly by URS personnel and is calibrated in accordance with manufacturer's instructions or other standards, and that results are properly recorded and filed.
3. Check with Health and Safety Representative to assure URS personnel have current medical clearance and training.
4. Assuming any other duties as directed by the PM or RHSM.
5. Coordinating with URS Health and Safety Professional to identify URS personnel on site for whom special PPE, exposure monitoring, or work restrictions may be required.
6. Conducting safety meetings for all site personnel in accordance with Section 13.
7. Conducting daily site inspections prior to the start of each shift. All inspections must be documented (preferably in a bound field logbook).
8. Providing ongoing review of the protection level needs as project work is performed, and informing the PM of the need to upgrade/downgrade protection levels as appropriate.
9. Seeing that decontamination procedures described in Section 10.0 are followed by URS personnel.
10. Establishing monitoring of URS personnel and recording results of exposure evaluations.
11. Halting URS site operations, if necessary, in the event of an emergency or to correct unsafe work practices.
12. Maintaining the visitor log.

13. Posting OSHA "Safety of the Job" and other required posters at the site.

4.3 REGIONAL HEALTH AND SAFETY MANAGER (URS)

The Regional Health and Safety Manager (RHSM) is responsible for:

1. Determining the need for periodic audits of the operation to evaluate compliance with this plan.
2. Providing health and safety support as requested by the SSO and PM.

4.4 PROJECT PERSONNEL (URS)

Project personnel involved in onsite investigations and operations are responsible for:

1. Taking all reasonable precautions to prevent injury to themselves and to their fellow employees.
2. Performing only those tasks that they believe they can do safely, and immediately reporting any accidents and/or unsafe conditions to the SSO or PM.
3. Implementing the procedures set forth in the Health and Safety Plan, and reporting any deviations from the procedures described in the Plan to the SSO or PM for action.
4. Notifying the PM and SSO of any special medical problems (i.e., allergies) and seeing that all onsite URS personnel are aware of such problems.
5. Reviewing project health and safety plan and signing Safety Plan Compliance Agreement.

4.5 SUBCONTRACTOR'S SAFETY REPRESENTATIVE

Each subcontractor is requested to designate a Subcontractor's Safety Representative (SSR) who is the subcontractor supervisor. The SSR is responsible for the safe and healthful performance of work by his work force and subcontractors. During subcontractor activities onsite, the SSR will perform continuing work area inspections, and conduct safety meetings and safety orientations for all new employees. The SSR will attend periodic safety meetings with the SSO. The SSR will also investigate accidents and overexposures involving subcontractor personnel.

5.0 JOB HAZARD ANALYSIS

5.1 CHEMICAL HAZARDS

There are two categories of chemical hazards associated with site activities:

- Site Constituents
- Chemicals used to conduct the site work

Site constituents are those which exist at the site and are the cause for conducting site activities. The chemicals that are brought on site in order to conduct the work may be hazardous and subject to regulation under OSHA's Hazard Communication Standard (29 CFR 1910.1200).

5.1.1 SITE CONSTITUENTS

From an occupational health standpoint, given that any potential exposure to site personnel will be only for a *short period of time (intermittent for several days)*, the levels of contaminants that have been, or could be, encountered during site activities *should not represent a significant concern* if the provisions of this HSP are appropriately implemented. However, *the site is still under investigation*, so the potential for exposure to elevated levels of these contaminants may exist. Overviews of the hazards associated with exposure to elevated levels of these contaminants may exist. Overviews of the hazards associated with exposure to the chemicals that may pose a hazard during site activities are presented below in terms of the following types of occupational exposure limits:

- PEL - Permissible Exposure Limit (OSHA Standard)
- TLV - Threshold Limit Value (ACGIH Guidance)
- REL - Recommended Exposure Limit (NIOSH Guidance)
- STEL - Short Term Exposure Limit
- C - Ceiling

OSHA Permissible Exposure Limits (PELs), ACGIH Threshold Limit Values (TLVs), and NIOSH Recommended Exposure Limits (RELs) are time-weighted averages (TWAs) defined as concentrations for a normal 8-hour work day and 40-hour work week to which almost all workers can be repeatedly exposed without suffering adverse health effects

Short Term Exposure Limit (STEL) is defined as the concentration to which workers can be exposed for short time periods without irritation, tissue damage, or narcosis sufficient to likely cause impairment of self-rescue or precipitate accidental injury. The STEL is a 15-minute time-weighted average that should not be exceeded at any time during the workday. STELs are used by OSHA, ACGIH and NIOSH for chemical exposure criteria.

A ceiling value (C) is a concentration that should not be exceeded at any time in any workday. Ceiling limits are used by OSHA, ACGIH and NIOSH for chemical exposure criteria.

Summaries on the site constituents of concern follow.

Polychlorinated Biphenyls has a mild hydrocarbon odor and targets the skin, eyes, liver and reproductive system. Symptoms of exposure include irritated eyes, chloracne, liver damage, and reproductive effects. It is considered a possible carcinogen.

PEL = 0.5 mg/m³. IDLH = 5 mg/m³.

Silica is odorless and targets the eyes and respiratory system. The greatest exposure is from concrete dust. Symptoms of exposure include irritated eyes and lung damage. TLV = 10 mg/m³ (Portland Cement). IDLH = 3000 mg/m³.

No. 6 Fuel Oil is a dark viscous liquid or heavy paste with a petroleum odor. It is a skin and respiratory irritant and central nervous system (CNS) depressant. Symptoms of exposure include irritation of the eyes, skin or respiratory tract; vomiting; diarrhea; CNS depression; increased respiration rate; tachycardia (excessively rapid heartbeat) and cyanosis (blue skin coloration). IARC lists fuel oils as a possible carcinogen (2B, limited animal data) PEL = 500 ppm. IDHL = 1,100 ppm. REL = 350 mg/m³ (10-hr TWA) or 1800 mg/m³ (15-min ceiling).

Asbestos is odorless and targets the respiratory system and eyes. Symptoms include asbestosis, dyspnea, interstitial fibrosis, restricted pulmonary function, finger clubbing, and irritated eyes. Asbestos exposure at high concentration of fibers results in cancer and lung diseases. TLV=0.1 fiber/cc

Total Petroleum Hydrocarbons (TPH) is a group of compounds that included oils, fuels, and greases. Both volatile and semi-volatile organic compounds discussed in this section are included. TPH is generally thought of in analytical chemistry terms, as an analytical method used to detect releases to the environment of petroleum products.

Polynuclear Aromatic Hydrocarbons (PAH) are a group of semi-volatile organics that are rather persistent in the environment. Some PAHs are carcinogenic with inhalation as the primary exposure route. The greatest carcinogenic effect is at the point of contact (i.e., lungs, skin, stomach). Skin disorders may also result due to high concentration exposures. Exposure limits have not been established for many specific PAHs in this large group of compounds.

Metals. Based on historical data collected from the site; lead, chromium and arsenic are believed to be the primary metals of concern. A description of each is given below.

Arsenic has been detected at various locations in the subsurface soils. Inorganic arsenic targets the liver, kidneys, skin, lungs, and lymphatic system. Symptoms of acute exposure include dermatitis, ulceration of the nasal septum, gastrointestinal disturbances, respiratory irritation. Chronic exposures may result in lung and lymphatic cancer. PEL = 0.01 mg/m³; IDLH = 5 mg/m³.

Chromium is a metal which occurs in trivalent and hexavalent forms, and is used for alloys, stainless-steel, protective coatings, and as an algaecide in cooling towers. Different chromium compounds have strong and varied colors. Exposure to chromium compounds targets the respiratory system and symptoms include fibrosis of the lungs. Hexavalent chromium (CrVI) compounds, including chromic acid are carcinogenic and corrosive to body tissues. TLV = 0.5 mg/m³ [III], 0.0001 mg/m³ [VI]

Lead is a fairly common metal with a variety of industrial applications. The gastrointestinal tract, central nervous system, kidneys, blood, and gums are targets of lead exposure. Symptoms of exposure include lassitude, insomnia, constipation, abdominal pain, colic, anemia, hypertension, anorexia, low body weight, malnutrition, pallor, tremors, and paralysis of the wrist. PEL = 0.05 mg/m³; IDLH = 700 mg/m³

2,4- and 2,6-Dinitrotoluene (DNT) is an orange-yellow solid with characteristic odor. DNT targets the blood, liver, and cardiovascular system. Exposure routes are primarily inhalation and dermal contact. DNT will readily absorb through intact skin. Chief symptoms of DNT exposure may include unpleasant metallic taste, weakness, dizziness, headache, loss of appetite, nausea, vomiting, difficulty in sleeping, and pain, numbness, and tingling in the extremities. Other symptoms are jaundice, anemia, anoxia, and cyanosis (a bluish discoloration of the skin). Dinitrotoluene is mutagenic in some testing animals, and NIOSH considers it a potential human carcinogen.

Skin contact with potentially contaminated materials will be minimized by the use of personal protective clothing (as described in Sections 1.0 and 7.0). Inhalation of vapors or particulates during the site activities will be minimized by air monitoring and the use of engineering controls, and respiratory protection will be used if Action Levels described in Section 1.0 are exceeded. Ingestion of contaminated materials will be minimized by the use of appropriate personal hygiene procedures during decontamination (i.e., thoroughly washing face and hands with soap and water after leaving the work area and prior to eating or drinking).

5.1.2 HAZARD COMMUNICATION MATERIALS

Materials which are considered hazardous materials under the OSHA Hazard Communication Standard (29 CFR 1910.1200) may be used during this project. In accordance with the URS Hazard Communication Program, the MSDSs for the hazardous materials listed in Section 1.0 are included in Attachment E. The SSO will make copies of these MSDSs available to any subcontractors (i.e. drillers, excavators) on this project.

URS written Hazard Communication program is located in Safety Management Standard 2, a copy of which shall be maintained on site.

5.2 PHYSICAL HAZARDS

Physical hazards at this work site include:

- Heat stress and cold stress;
- Noise from the operation of site equipment;
- Slip-trip-fall type of accidents;
- Drilling/Geoprobe
- Utilities
- Lifting/Ergonomics
- Power tools (concrete cutting)
- Vehicle Safety
- Hand tools
- Being caught in or struck by moving equipment;

- Muscle strains from hand auger work.

5.2.1 HEAT STRESS RECOGNITION AND CONTROL

Heat stress monitoring shall commence when personnel are wearing PPE, including Tyvek®-type coveralls, and the ambient temperature exceeds 70°F. If standard work garments (cotton coveralls) are worn, monitoring shall commence at 85°F. Heat stress monitoring and control guidance can be found in Attachment A. Additional information regarding Heat Stress is located Safety Management Standard 18, a copy of which shall be maintained on site. As cool temperatures are expected to prevail during the course of this project, problems relating to heat stress are not anticipated.

5.2.2 COLD STRESS RECOGNITION AND CONTROL

Protection against cold stress should be initiated when temperatures drop below 45°F. Cold stress guidance is provided below.

Exposure to cold working conditions can result in cold stress (hypothermia) and/or injury (frostbite) to hands, feet, and head. Hypothermia can result when the core body temperature drops below 36°C (96.8°F). Lower body temperature will likely result in dizziness, drowsiness, disorientation, slurred speech, or loss of consciousness, with possible fatal consequences. Pain the extremities may be the first warning of danger to cold stress. Shivering develops when the body temperature has fallen to 35°C (95°F).

Hypothermia can be brought on by exposure to cold air, immersion in cold water, or a combination of both. Wind chill factor, the cooling power of moving air, is a critical factor in cold stress.

Workers must wear adequate insulating clothing if work is performed in temperatures below 4°C (40°F). At temperatures of 2°C (35.6°F or less), workers whose clothing becomes wet should be immediately provided with a change of clothing, and if necessary, treated for hypothermia. Treatment includes warming the victim with skin-to-skin contact, or by providing warm blankets or other coverings, and drinking warm liquids. Skin exposure should not be permitted at temperatures of -32°C (-25°F) or below.

If fine work is to be performed with bare hands for more than 10-20 minutes at temperatures below 16°C (60°F), provisions should be made for keeping the workers' hands warm. If equivalent chill temperatures fall below 40°F and fine manual dexterity is not required, then gloves should be worn. Metal handles of tools should be covered with insulating material at air temperatures below -1°C (30°F).

If work is to be performed continuously in the cold when the wind chill factor is at or below -7°C (19°F), heated warming shelters (tents, trailers, vehicle cabs) should be made available nearby.

5.2.3 NOISE HAZARDS

Previous surveys indicate that heavy equipment such as *drilling or excavation* equipment may produce continuous and impact noise at or above the action level of 85 dBA. All URS personnel

within 25 feet of operating equipment, or near an operation that creates noise levels high enough to impair conversation, shall wear hearing protective devices (either muffs or plugs). URS personnel who are in the Medical Surveillance program are automatically enrolled in the URS Hearing Conservation Program and have had baseline and, where appropriate, annual audiograms. Personnel will wash their hands with soap and water prior to inserting earplugs to avoid initiating ear infections. Additional information regarding the URS Hearing Conservation Program is located in Safety Management Standard 26, a copy of which shall be maintained on site.

5.2.4 SLIP/TRIP/FALL HAZARDS

Workers should exercise caution when walking around the site to avoid fall and trip hazards. If there are holes or uneven terrain in the work area that could cause site personnel to fall or trip, they must be covered, flagged or marked to warn workers. Workers should exercise caution around open excavations, such as test pits, and avoid getting closer than two feet to the edge of an unsloped excavation unless guardrails or fall protection is provided. If conditions become slippery, workers should take small steps with their feet pointed slightly outward to decrease the probability of slipping. Gravel or sand should be spread in muddy areas to reduce slipperiness. Workers should watch where they are walking and walk only in areas of good stability.

5.2.5 LIFTING HAZARDS

The following guidelines will be followed whenever lifting equipment such as portable generators, coolers filled with samples, any other objects that are of odd size or shape, or that weigh over 40 pounds. Safe lifting procedures are described in Safety Management Standard 45, a copy of which is to be available on site.

- Get help when lifting heavy loads. Portable generators will only be lifted using a two-person lift.
- When moving heavy objects such as drums or containers, use a dolly or other means of assistance.
- Plan the lift. If lifting a heavy object, plan the route and where to place the object. In addition, plan communication signals to be used (i.e., "1,2,3, lift," etc.)
- Wear sturdy shoes in good conditions that supply traction when performing lifts.
- Keep your back straight and head aligned during the lift and use your legs to lift the load – do not twist or bend from the waist. Keep the load in front of you – do not lift or carry objects from the side.
- Keeping the heavy part of the load close to your body will help maintain your balance.

5.2.6 HEAVY EQUIPMENT

Operation of heavy equipment during site activities presents potential physical hazards to personnel. Issues associated with heavy equipment operations are addressed in Safety Management Standard 19, a copy of which is to be maintained on site.

The following precautions must be observed whenever heavy equipment is in use:

- Personal protective equipment (PPE) such as steel-toed shoes, safety glasses or goggles, and hard hats must be worn whenever such equipment is present.
- Personnel must at all times be aware of the location and operation of heavy equipment, and take precautions to avoid getting the way of its operation. Never assume that the equipment operator sees you; make eye contact and use hand signals to inform the operator of your intent, particularly if you intend to work near or approach the equipment.
- Traffic safety vests **ARE REQUIRED** for URS personnel working near mobile heavy equipment, such as backhoes and other excavators.
- Never walk directly in back of or to the side of, heavy equipment without the operator's acknowledgment.
- When an equipment operator must operate in tight quarters, the equipment subcontractor should provide a person to assist in guiding the operator's movements.
- Keep all non-essential personnel out of the work area.
- Any heavy equipment that is used in the exclusion zone should remain in that zone until its task is completed. The equipment subcontractor should completely decontaminate such equipment in the designated equipment decontamination area as required prior to moving the equipment outside of the EZ/CRC.

5.2.7 UNDERGROUND AND ABOVEGROUND UTILITIES

The Site Manager or SSO is responsible locating that underground utilities prior to the commencement of any subsurface (> 0.3 meters (1 ft.) activities. Resources include site plans, utility companies, and regional or private utility locating services. The proper utility company personnel shall certify in writing to the Site Manager or SSO the deactivation of underground utilities, and the certification retained in the project files.

Procedures for activities proximal to utility locations are located in Safety Management Standard 34, a copy of which is to be maintained on site.

Excavation, drilling, crane, or similar operations adjacent to overhead lines shall not be initiated until operations are coordinated with the utility officials. Operations adjacent to overhead lines are prohibited unless one of the following conditions is satisfied:

- Power has been shut off and positive means (e.g. lockout/tagout) have been taken to prevent lines from being energized. Wherever possible, the URS SSO will observe power shut off and place a lock and tag on the switch. In all cases utility company personnel shall certify in writing to the Site Manager or SSO the deactivation of overhead utilities, and the certification retained in the project files. The Site Manager or SSO must also attempt to verify power shut off by checking that power is no longer available to the affected building or equipment.
- Equipment, or any part of the equipment, cannot come within the following minimum clearance from energized overhead lines:

<u>Power Lines</u> <u>Nominal System (kv)</u>	<u>Minimum Required</u> <u>Clearance</u>
0-50	10 feet
51- 200	15 feet
201-300	20 feet
301-500	25 feet
501-750	35 feet
751-1000	45 feet

5.2.8 WORK AREA PROTECTION

As the project operations may be undertaken in a roadway or parking lot, motor vehicles may be a hazard. Guidance on properly coning and flagging the work area is located in Attachment G. Consideration should be given to parking a work vehicle within the coned area between the work area and oncoming traffic. Procedures for work zone traffic control are located in Safety Management Standard 32, a copy of which is to be maintained on site.

5.2.9 TRENCHING AND EXCAVATION

All URS personnel are prohibited from entering a trench or excavation until it has been inspected by a competent person in accordance with 29 CFR 1926.650-651. If personnel are required to enter a trench or excavation that is deeper than *five* feet, the following provisions must be provided prior to entry by the contractor who created the excavation:

- If hazardous atmospheres are suspected, any trench or excavation more than four feet deep must be monitored.
- Adequate shoring, sloping, or benching techniques must be employed.
- Adequate means of employee access and egress must be utilized.
- The contractor's trained, competent person must inspect the trench or excavation on a daily basis, before work commences and on an as-needed basis throughout the day.

A copy of the Fed-OSHA Excavation Standard can be obtained from the Regional Health and Safety Manager. All provisions of this regulation must be complied with when working in a

trench or excavation. Additional information regarding URS procedures for excavation activities are located in Safety Management Standard 13, a copy of which is to be maintained on site.

5.2.10 HAND AUGERING

Muscle strains can occur with hand augering. To minimize the occurrence of injury, the following should be observed:

- Keep augers sharp – a dull auger requires more work to advance through the soil.
- Before beginning work, stretch or warm up the body as you would prior to exercising.
- Try to avoid excessive twisting or wrenching motions when using the auger.

5.2.11 HEAVY EQUIPMENT AND GEOPROBE/DRILLING

Drilling operations will be conducted following the requirements in SMS 56. The regulatory standards applicable include, but are not limited to, the following:

29 CFR 1910

Subpart F – Powered platforms, manlifts,
vehicle-mounted work platforms

Subpart N – Materials handling and storage

29 CFR 1926

Subpart N – Cranes, derricks, hoists

Subpart O – Motor vehicles, mechanized
equipment

Subpart T – Demolition

Subpart W – Rollover protective structures:
overhead protection

The general rules to avoid incidences with heavy equipment include:

- Always remain clear to moving parts of the equipment such as the reach of a backhoe arm and drilling augers
- Keep eye contact with the operator
- Use a spotter when backing equipment (operator to provide spotter)
- Limit the number of personnel in a work area to essential persons
- Schedule work to avoid crowding the work area

Heavy equipment will be inspected daily by the operator to ensure safety devices are working properly. These include back-up alarms, kill switches, guards to moving parts, and emergency brakes.

5.2.12 CONFINED SPACES

Wipe sample collection will require entry into confined spaces. For these sample collection activities, and any others that may require confined space entry, all work will be performed in accordance with OSHA regulations and SMS 10.

5.3 BIOLOGICAL HAZARDS

Insects, spiders, ticks, and other invertebrates may pose a hazard to field personnel. Personnel sensitive or allergic to insect bites should be cautious and alert to their working environment. Allergic personnel should carry medication with them and notify the SSO of their medical condition when arriving at the Site. Extra precaution will be taken in suspect environments to avoid exposure. Fleas and ticks may also be carriers of infectious disease.

Suspect environments include tall grasses and wooded areas. These habitats are not present on the SLAAP site.

Poisonous spiders include black widow and brown recluse. Both can be found in interior or exterior environments. Brown recluse spiders prefer dark locations, avoiding lighted areas and have been found residing in clothing, shoes, stored equipment, and dark areas of closets and furniture.

Black widow spiders are shining black with a large abdomen and red hourglass patch on their belly. Their size ranges from 1/8 inch male to 3/8 inch female. The female has a venomous bite.

Brown recluse spiders are small, medium brown spiders with a black violin patch on its back. Its legs may be lighter in color. The bite of a brown recluse can make an adult ill and the skin will blister and eventually deteriorate the tissue if left untreated.

If bitten by spider or venomous insect, try to identify the type of spider or insect, treat the area using standard first aid procedures, and seek medical attention if complications develop.

6.0 EXPOSURE MONITORING PLAN

Heat stress, noise, and chemical exposures may be encountered at this site. Heat stress monitoring and prevention is addressed in Section 5.2.1. Noise levels will not be monitored; URS personnel will wear hearing protection as described in Section 5.2.3.

6.1 CHEMICAL EXPOSURE MONITORING

The field instrumentation described in this health and safety plan has been specifically selected for the contaminants that may be reasonably anticipated to be encountered during this course of this project. Selection factors include anticipated airborne concentrations, potential interference, ionization potentials, instrument sensitivity, and occupational exposure limits. The Action Levels specified in Section 1.0 were established with the expectation that specific instruments will be used. **DO NOT SUBSTITUTE INSTRUMENTS WITHOUT THE CONSENT OF THE REGIONAL HEALTH AND SAFETY MANAGER.**

The monitoring equipment specified in Section 1.0 will be used on a regular basis to evaluate the potential for exposure to airborne contaminants. Volatile organics are not suspected at the SLAAP site. Therefore, monitoring with a PID/FID is not required at this time.

6.2 DUST MONITORING AND CONTROL

High winds and site operations can cause airborne dust hazards. In order to monitor dust levels at the site, a miniRam dust monitor will be used. If site operations generate sustained visible dust, a water mist will be applied to reduce dust generation. If the mist is not effective in reducing dust generation, personnel will don respirators (half-face or full-face as appropriate) with P100 cartridges.

Sand and Portland cement dust that may be generated during concrete cutting may contain free silica (quartz). Airborne exposure to silica dust may occur during handling of these materials. Air purifying respirators with P100 cartridges should be worn for those sand and cement handling operations where there is a reasonable possibility for exposure to sustained airborne dust.

Dust monitoring will be conducted in the immediate vicinity of the contaminant source point or work area (e.g., at the borehole and cuttings adjacent to the borehole). If readings exceed the first Action Level ($\geq 1 \text{ mg/m}^3$ one minute), monitoring in the operator's breathing zone (OBZ) of the person working nearest the point of operations/contaminant source will start immediately, and site personnel will don protective clothing.

A reading in the OBZ above the second Action Level ($\geq 2 \text{ mg/m}^3$ one minute) will require the use of air purifying respirators with appropriate cartridges. If the monitoring instrument reads more than 10 mg/m^3 (> one minute), or 50 mg/m^3 instantaneously, work will stop, and workers will move upwind while the airborne contaminants dissipate. If elevated levels remain for more than five minutes the RHSM and PM will be contacted for further guidance.

6.3 OXYGEN DEFICIENT ATMOSPHERES

Oxygen deficient atmospheres may be encountered in excavations. An excavation with an oxygen deficient atmosphere is not to be entered unless absolutely necessary and then only after following appropriate confined space entry procedures. These procedures are available by contacting the Regional Health and Safety Manager to obtain a confined space entry permit. Any confined space entry must be approved by the Regional Health and Safety Manager.

Prior to entering any space where an oxygen deficiency may exist, an oxygen meter will be used to test for adequate oxygen levels. Decisions will be based on oxygen concentrations as follows:

20.8%	Continue Operations
<20.8%	Continuous Monitoring
<19.5%	Do not enter, ventilate and determine if supplied air equipment is required

6.4 PERSONAL EXPOSURE MONITORING

In accordance with 29 CFR 1910.120(h), a URS safety professional or industrial hygienist will perform quantitative personal monitoring on personnel at greatest risk of exposure (i.e., those working in the exclusion zone). The safety professional will determine who to sample based upon site conditions at the time of the sampling; monitoring will commence when the Second Action Level is exceeded.

Personnel will be monitored for chemicals of most concern for the SLAAP area in accordance with OSHA or National Institutes for Occupational Safety and Health (NIOSH) Methods. A laboratory accredited by the American Industrial Hygiene Association will perform analyses, and results will be reported and records maintained in accordance with OSHA criteria.

7.0 PERSONAL PROTECTIVE EQUIPMENT

7.1 ANTICIPATED LEVELS OF PROTECTION

The minimum Personal Protective Equipment (PPE) for site personnel includes:

- Hardhat
- Safety glasses with side shields (or impact resistant goggles)
- Steel-toed boots or Chemical-resistant steel-toed boots
- Ear protection in vicinity of noisy equipment
- Work gloves and/or chemical-resistant gloves

Described below are the levels of protection for each type of work activity to be conducted at the site. PPE requirements for each field activity is provided in Table 1-1. Level D and Modified D are anticipated for most of the activities.

7.1.1 NON-INTRUSIVE ACTIVITIES

Non-intrusive activities include site reconnaissance (utilities survey, building surveys, site walk-throughs), surveying, surficial geophysical surveys, air quality surveys, and coordination of field activities. These activities will be performed in Level D protective equipment.

7.1.2 INTRUSIVE ACTIVITIES

Modified Level D protection will be worn as a minimum by site personnel when performing intrusive activities and when present in an exclusion zone and decontamination area. Intrusive activities include, but are not limited to, surface and subsurface soil sampling; sediment sampling; trenching and excavation; building materials and waste sampling; and equipment decontamination.

Poly-coated Tyvek will be utilized during activities which pose a splash or spray hazard to personnel. In particular, sewer system sampling and heavy equipment decontamination will require coated Tyvek coveralls. A splash shield should be worn during equipment decontamination utilizing a high-pressure sprayer. Ankles and wrist will be taped for modified Level D protection using disposable coveralls.

Personnel will upgrade to Level C protection when air contaminants are present in the breathing zone as dictated by air monitoring (See Section 6.0). Personnel will be allowed to downgrade to Modified Level D protection according to the air monitoring guidelines outlined in Section 6.0.

Full-face or half-face air purifying respirators will be worn by site personnel utilizing Level C protection. Personnel will only wear a respirator (type, make, and size) for which they have been fit-tested. Cartridges to be used must be approved for the respirator to be worn. Respirator cartridges will be capable of filtering metals and particulates. For example, a P100 cartridge for MSA respirators.

Respirator cartridges will be changed at any indication of breakthrough, when breathing becomes difficult, or at the end of each day's use.

As the various monitoring Action Levels are reached, additional PPE is required. Section 7.2 and Table 1-1 provides the description of the incremental PPE requirements relative to specific Action Levels, as well as the specific kinds of PPE to be used. Section 1.0 provides a summary of the PPE requirements. Procedures for use and selection of personal protective equipment are located in Safety Management Standard 29.

7.2 PROTECTION LEVEL DESCRIPTION

This section describes the general requirements for each protection level. PPE for Modified Level D will be selected based on the hazards and work activities.

LEVEL D PROTECTION

- Coveralls (cotton or permeable disposable) or work clothes
- Hearing protection (as required)
- Steel toe boots or work shoes
- Safety glasses or goggles
- Hard hat (as required by OSHA)

MODIFIED LEVEL D PROTECTION

- Coveralls (Disposable or Poly-coated disposable) as appropriate for work activity
- Steel-toed chemical-resistant boots (Polyvinyl chloride [PVC], neoprene, rubber) or work boots with covers
- Inner gloves (latex or nitrile)
- Outer, chemical-resistant gloves (nitrile, PVC, neoprene)
- Safety glasses or goggles
- Hard hat (as required by OSHA)
- Splash shield (optional)
- Hearing protection (as required)

LEVEL C PROTECTION

- Air-purifying respirator with a particulate filter cartridge
- Disposable coveralls (Poly-coated disposable for splash hazards)
- Chemical-resistant, steel-toed boots (PVC, neoprene, rubber), or work boots with covers
- Chemical-resistant inner (latex or nitrile) and outer (nitrile, PVC, neoprene) gloves
- Hard hat (as required)
- Safety glasses or goggles (with half-face respirator)
- Splash shield (optional)
- Hearing protection (as required)

7.3 LIMITATIONS OF PROTECTIVE CLOTHING

The protective equipment ensembles selected for this project are anticipated to provide protection against the types and concentrations of hazardous materials that may potentially be encountered during field operations. However, no protective garment, glove or boot is resistant to all chemicals at any concentration; in fact, chemicals may continue to permeate or degrade a garment even after the source of the contamination is removed.

In order to obtain optimum usage from PPE, the following procedures are to be followed by all URS personnel:

- When using disposable coveralls, don a clean, new garment after each rest break or at the beginning of each shift
- Inspect all clothing, gloves and boots both prior to and during use for:
 - Imperfect seams
 - Non-uniform coatings
 - Tears
 - Poorly functioning closures
- Inspect reusable garments, boots and gloves both prior to and during use for:
 - Visible signs of chemical permeation such as swelling, discoloration, stiffness or brittleness
 - Cracks or any signs of puncture or abrasion

Any reusable garments exhibiting any such characteristics will be discarded.

7.4 DURATION OF WORK TASKS

The duration of work tasks in which personnel use PPE ensembles that include chemical protective clothing (including uncoated Tyvek®) will be established by the SSO. Variables to be considered include ambient temperature and other weather conditions, the capacity of individual personnel to work in the required level of PPE in heat and cold, and the limitations of specific PPE ensembles. The recommended rest breaks are as follows:

- Fifteen minutes midway between shift startup and lunch
- Lunch break (30-60 minutes)
- Fifteen minutes midway between lunch and shift end

Rest breaks are to be taken in the support zone or other clean area after personnel have completed the decontamination process, including soap and water wash of hands and face. Additional rest breaks will be scheduled according to heat stress monitoring protocols as described in SMS 18.

8.0 RESPIRATORY PROTECTION

8.1 RESPIRATORY PROTECTION PROGRAM

A respiratory protection program which complies with OSHA Standard 29CFR 1910.134 will govern use of respiratory protection at the site. The URS safety procedure SMS 42 will govern selection and use of respiratory protection, fit testing of respirators, medical screening, inspection, cleaning, and maintenance.

8.2 RESPIRATOR USE INSTRUCTIONS

Only those employees who have been properly trained and qualified on the specific type of respirator to be worn may use respirators. No individual will enter an area where the use of respiratory protective equipment is required unless the person has been trained.

All employees whose job assignment requires the use of respirators are given training in accordance with 29 CFR 1910.134 during initial 40-hour and annual Refresher training for hazardous waste operations.

Hands-on training on inspecting and donning a respirator, including user seal checks, was also provided at the time of fit testing. Retraining is performed annually on each type of respirator worn by the individual. In addition, site-specific respirator training is provided during Site Safety Briefings conducted by the SSO. Training records are kept in the employee's training file.

Particulate respirator cartridges should be changed out when the wearer has difficulty breathing through the cartridges. Chemical gas or vapor respirator cartridges will be *changed out at least daily*.

The fit of a chemical gas or vapor respirator should be rechecked and the cartridges changed if the wearer detects chemical odor or feels chemical irritation on the skin, both indicators of leakage or cartridge breakthrough.

9.0 SITE CONTROL

9.1 GENERAL

Barricade tape and/or barricades shall be used to delineate a work zone for safety purposes around the work area. The barriers should be set in a 25-foot radius (as practical) around the work area to provide sufficient maneuvering space for personnel and equipment. A short piece of barricade tape can be affixed to a secure upright (e.g., drill rig mast or vehicle antenna) to serve as a wind direction telltale. A five-foot opening in the barricades at the support zone (upwind of the work area) will serve as the personnel and equipment entry and exit point. The personnel decontamination station may be established at this point. All entry and exit from the work area will be made at this opening in order to control potential sources of contamination and leave contaminated soil and debris in the work area.

At the end of the shift, all boring/sampling holes and excavations must be covered or otherwise secured. All cuttings and decontamination fluids are to be handled in accordance with relevant regulations and instructions from the PM.

The Site Manager or SSO will determine an upwind evacuation area prior to each day, and all personnel will be notified of its location. A horn or other signaling device will be used to signal an evacuation in the event of an emergency. Three blasts of the horn will be the signal to immediately stop work and proceed to the evacuation area.

The SSO will verify that all site visitors sign the visitors' log. In addition, all URS personnel and site visitors entering the work area must present evidence of their participation in a medical surveillance program and completion of health and safety training programs that fulfill the requirements of this plan.

The SSO will provide site hazard and emergency action information to all site visitors before they enter the site. This can be done by providing a copy of this HSP to the visitor.

9.2 WORK ZONES

Work zones will be established as described below.

- **Exclusion Zone** – a 25 foot (as practical) circle around the work area will be defined before work starts. The encircled area will constitute the "Exclusion Zone". This zone is where potentially hazardous contaminants and physical hazards to the workers will be contained. Appropriate personal protection will be required in this area. Plastic sheeting (visqueen) and/or tarps may be used as necessary to control contaminated materials spilled to the ground during site operations. The size of the Exclusion Zone may be altered to accommodate site conditions and to ensure contaminant containment.
- **Contamination Reduction Zone (CRZ)** – a corridor leading from the Exclusion Zone will be defined, and will lead from the work area to a break area. All decontamination activities will occur in the CRZ. A waste container will be placed at the end of the corridor so contaminated disposable equipment can be placed inside

and covered. Surface/soil contamination in this area should be controlled using plastic sheeting. No one will be permitted into the Contamination Reduction Zone or Exclusion Zone unless they are in full compliance with the requirements of this Plan.

- **Support Zone** – a **Support Zone**, the outermost part of the site, must be defined for each field activity. Support equipment is located in this uncontaminated or clean area. Normal work clothes are appropriate within this zone. The location of this zone depends on factors such as accessibility, wind direction (upwind of work area), and resources (i.e., roads, shelter, utilities).

9.3 SITE ACCESS

Access to the exclusion zone and decontamination areas will be limited to personnel working on-site, project management, and approved visitors. Exclusion zones and decontamination areas will be established at, or near, specific work locations. SLAPP is a fenced property and site access is controlled. All visitors will check in at the field office upon arrival.

10.0 DECONTAMINATION PROCEDURES

10.1 GENERAL

Decontamination of equipment and personnel will be performed to limit the migration of contaminants off-site and between work zones at the site. Equipment and other tools will be cleaned prior to the site entry to remove grease, oil, encrusted dirt, or other materials. The SSO or site manager will inspect all equipment prior to use on-site.

Reusable sampling equipment and any other tools used for intrusive work will be decontaminated between sampling locations. Cleaning will consist of scraping and scrubbing to remove encrusted materials followed by an Alconox soap and water wash, if necessary, and potable water rinse. Following decontamination, clean equipment will be stored on plastic sheeting and air dried, wrapped in plastic, or wrapped in aluminum foil if not immediately reused.

At the conclusion of work at the site, all equipment will be thoroughly cleaned using the methods described below. *The SSO will inspect all equipment leaving the site for adequacy of decontamination.*

10.2 PERSONAL DECONTAMINATION PROCEDURES

Personnel decontamination will be conducted at a decontamination area set up at the edge of each exclusion zone or a central decontamination station. Decontamination will consist primarily of soap and water washing and water rinse of exterior protective gear followed by doffing of the gear.

The general decontamination sequence for activities conducted at modified Level D are as follows:

1. Wash outer gloves and boots
2. Rinse outer gloves and boots
3. Remove tape at wrists and boot interface (as appropriate)
4. Remove outer gloves and boot covers
5. Remove coveralls (as appropriate)
6. Remove goggles and hard hat (as appropriate)
7. Remove inner gloves

The general decontamination sequence for activities conducted at Level "C" are as follows:

1. Wash outer gloves and boots
2. Rinse outer gloves and boots
3. Remove tape at wrist and boot interface
4. Remove outer gloves and boot covers
5. Remove and rinse hard hat
6. Remove coveralls
7. Remove APR, discard cartridges (if necessary), clean APR
8. Remove inner gloves

Gloves and coveralls will be removed by turning inside out. Ground cloths, gloves, coveralls, and APR cartridges will be placed into plastic trash bags and stored at the contamination-reduction zone for disposal in a municipal trash receptacle.

Respirators will be cleaned with potable water or equivalent in the field after each use and will be washed at the end of the day using a soap and water wash followed by a potable water rinse. Respirators will be inspected daily for damage, missing parts, and proper function. Other reusable protective equipment worn by personnel performing field activities will be rinsed with potable water after each use and will be cleaned at the end of each day in the manner described by the manufacturer. Reusable items will be air-dried and placed in plastic bags for storage.

10.3 EMERGENCY DECONTAMINATION

In an emergency, the primary concern is to prevent the loss of life or severe injury to personnel. Decontamination will be delayed until the victim is stabilized if immediate medical treatment is required to save a life. Decontamination will be performed immediately if it can be performed without interfering with essential life-saving techniques or first aid, or if a worker has been exposed to corrosive material. Provisions will be made for protecting rescue, first aid, or medical personnel from hazardous material and for disposing of contaminated clothing and equipment.

- Protective clothing will be removed from the victim as soon as possible to reduce heat stress or treat cold stress if such an emergency develops.
- Wash, rinse, and/or cut off protective clothing and equipment if decontamination can be done.
- If decontamination cannot be completed, wrap the victim in blankets or plastic to reduce contamination of other personnel and equipment.
- Alert emergency and off-site medical personnel to potential contamination.
- Instruct off-site medical personnel about specific decontamination procedures, if needed.
- Send along site personnel familiar with the incident.

10.4 EQUIPMENT DECONTAMINATION PROCEDURES

Large equipment decontamination will be conducted at the exclusion zone or an established decontamination station. The general decontamination for large equipment is usually conducted with a high pressure sprayer following the sequence below:

1. Lay down plastic ground cloth (if appropriate)
2. Rinse with potable water to remove soils
3. Wash with potable water and Alconox (or equivalent) solution
4. Rinse with potable water

Decontamination of small sampling equipment will be conducted at the exclusion zone or an established decontamination station. The general decontamination sequence is as follows:

1. Lay down plastic ground cloth (if appropriate)
2. Wash and scrub with potable water
3. Wash and scrub with Alconox and potable water
4. Rinse with potable water

5. Rinse with distilled water
6. Air dry

10.5 CONTROL OF FIELD WORK-GENERATED WASTE MATERIALS

Expendable materials having a low probability of contamination will be collected on a routine basis. The materials will be placed into trash bags and will be temporarily stored at the contamination-reduction zone. The materials collected will be put in a municipal trash receptacle or as directed by the client's representative. Expendable materials include:

- Decontaminated expendable personal protective equipment
- Ground cloths
- Domestic refuse
- Soil cuttings and decontamination fluids generated during drilling activities will be managed in accordance with the project-specific field sampling plan.

10.6 SAMPLE HANDLING

All sample containers collected during the site characterization that are to be submitted to a laboratory for analysis will be decontaminated prior to packaging for shipment. Procedures for sample container decontamination and shipment will be as follows:

- Place clear plastic tape over label to protect the sample label
- Rinse or spray the containers with distilled water; containers with encrusted soil shall be cleaned by scrubbing with soap and water followed by a distilled water rinse
- Dry sample containers
- Prepare for shipment

In order to protect laboratory personnel from potentially contaminated samples and broken containers, the following precautions will be taken

- The shipping cooler will be lined with bubble wrap or foam packaging material to protect containers from breakage
- All samples will be placed in a plastic bag lining the cooler
- Individual sample containers may be wrapped in foam or bubble wrap to prevent breakage
- The plastic trash bag will be tied or sealed with packaging tape
- The drain hole on the cooler will be taped shut

All sample shipping will follow the procedures and requirements in SMS 48 (Attachment 3), DOT regulations, and IATA requirements (for Federal Express shipments.)

10.7 EQUIPMENT AND SUPPLIES

Decontamination equipment and supplies consist of, but are not limited to, the following:

- Potable water
- Washtubs
- Alconox or Liquinox, follow mixing instructions
- Brushes, hand sprayers
- Plastic sheeting
- 5-gallon buckets with lids
- Garbage bags
- Pressure sprayer/steam cleaner

10.8 SANITATION

Potable water will be made available at the site, either from a pressurized source or commercially available bottled water. Drinking cups will be supplied so personnel will neither drink directly from the source of water nor have to share drinking cups. Sources of non-potable water shall be clearly labeled as such.

Unless toilet facilities are available on site, portable toilet facilities, such as chemical toilets, will be provided on site.

Washing facilities will be provided on site, and will be located in the decontamination area or the support area. Soap, clean water, wash basins and single-use towels (or the equivalent) will be available for personnel use.

URS procedures for site sanitation are located in Safety Management Standard 30.

11.0 SAFE WORK PRACTICES

11.1 GENERAL

1. Eating, drinking, chewing gum or tobacco, and smoking are prohibited in the contaminated or potentially contaminated area or where the possibility for the transfer of contamination exists.
2. All personnel will enter designated work areas only through the contamination reduction zone (CRZ). All personnel leaving an exclusion/work zone must exit through the CRZ and pass through the decontamination station as described in Section 10.0.
3. Personnel will wash their hands and face thoroughly with soap and water prior to eating, drinking, smoking, or other hand-to-mouth activities.
4. Avoid contact with potentially contaminated substances. Do not walk through puddles, pools, mud, etc. Avoid, whenever possible, kneeling, leaning or sitting on contaminated surfaces. Do not place monitoring equipment on potentially contaminated surfaces (i.e., ground, etc.)
5. All field crew members should make use of their senses to alert them to potentially dangerous situations in which they should not become involved (i.e., presence of strong, irritating or nauseating odors).
6. Only those vehicles and equipment required to complete work tasks should be permitted within the exclusion/work zone (drill rigs, excavators, and similar items). All non-essential vehicles should remain within the support zone.
7. Containers, such as drums, will be moved only with the proper equipment and will be secured to prevent dropping or loss of control during transport.
8. Field survey instruments, should be covered with plastic or similar covering to minimize the potential for contamination.
9. No matches or lighters will be permitted in the work area/exclusion zone or contamination reduction zone.
10. Contaminated protective equipment, such as respirators, hoses, boots, and disposable protective clothing, will not be removed from the work area/exclusion zone or decontamination area until it has been cleaned, or properly packaged and labeled.
11. Prevent, to the extent possible, spills. In the event that a spill occurs, contain liquid if possible.
12. Prevent splashing of the contaminated materials.

13. Field crewmembers shall be familiar with the physical characteristics of the site operations including:
 - Wind direction in relation to the contaminated area;
 - Accessibility to equipment and vehicles;
 - Areas of known or suspected contamination;
 - Site access; and
 - Nearest water sources.
14. The number of personnel and equipment in the exclusion zone should be minimized but only to the extent consistent with workforce requirements of safe site operations.
15. All wastes generated by URS activities at the site will be disposed of as directed by the PM.
16. All personal protective equipment will be used as specified and required.
17. The buddy system will be used at all times.
18. Personnel are to immediately notify the SSO or Site Manager if any indications of potential explosions or unusual conditions are observed.

11.2 SAMPLING PRACTICES

For all sampling activities, the following standard safety procedures shall be employed:

1. All sampling equipment should be cleaned before proceeding to the sampling location.
2. At the sampling location, sampling equipment should be cleaned after each use.
3. Work in "cleaner" areas should be conducted first where practical.
4. All unauthorized personnel will remain outside exclusion zones at all times.

11.3 SAMPLE SHIPMENT/HAZARDOUS MATERIALS SHIPMENT

If samples to be collected during the course of this project fall under the criteria that defines them as hazardous materials under DOT regulations 49 CFR Parts 171-177 (see URS guidelines for determination), then they must be shipped in accordance with those regulations by an individual who is certified as having been Function-Specific trained as required under the DOT regulations.

12.0 EMERGENCY RESPONSE PLAN

It is URS policy to evacuate personnel from areas involved in hazardous material emergencies and to summon outside assistance from agencies with personnel trained to respond to the specific emergency. This section outlines the procedures to be followed by URS personnel in the event of a site emergency. These procedures are to be reviewed during the onsite safety briefings conducted by the SSO.

In the event of a fire or medical emergency, the emergency numbers identified in Section 1.0 (page 1) can be called for assistance.

12.1 ROLES AND RESPONSIBILITIES

The emergency response team will consist of employees who assume the following roles:

- Emergency Care Provider(s)

Provide first aid/CPR as needed.

- Communicator

The role of the communicator is to maintain contact with appropriate emergency services, providing as much information as possible, such as the number injured, the type and extent of injuries, and the exact location of the accident scene. The communicator should be located as close to the scene as possible in order to transmit to the emergency care providers any additional instructions that may be given by emergency services personnel in route.

- Site Supervisor

The site supervisor (usually the SSO) should survey and assess existing and potential hazards, evacuate personnel as needed, and contain the hazard. Follow up responsibilities include replacing or repairing damaged equipment, documenting the incident, and notifying appropriate personnel/agencies described under incident reporting. It also includes reviewing and revising site safety and contingency plans as necessary.

In the event of an emergency, notify site personnel of the situation. Survey the scene to determine if the situation is safe, to determine what happened, and to search for other victims. The Emergency Response Checklist (Attachment B) can be used to help remember the things to do in an emergency.

12.2 COMMUNICATION

A communication network must be set up to alert site personnel of emergencies and to summon outside emergency assistance. Where voice communication is not feasible an alarm system (i.e., sirens, horns, etc.) should be set up to alert employees of emergencies. Radio communication

may also be used to communicate with personnel in the exclusion zone. Where phone service is not readily available, radios or portable phones should be used to communicate with outside agencies.

Site personnel should be trained on the use of the site emergency communication network. Emergency phone numbers shall be posted at the phone or radio used for outside communication. The SSO is responsible for establishing the communication network prior to the start of work, and for explaining it to all site personnel during the site safety briefing.

In the event of an emergency, personnel will use the following hand signals where voice communications are not feasible:

<u>Signal</u>	<u>Definition</u>
Hands clutching throat	Out of air/can't breathe
Hands on top of head	Need assistance
Thumbs up	OK/I'm alright/I understand
Thumbs down	No/negative
Arms waving upright	Send back support
Grip partner's wrist	Exit area immediately

12.3 PLACES OF REFUGE

In the event of a site emergency requiring evacuation, all personnel will evacuate to a pre-designated area located a safe distance from any health or safety hazard. The SSO will designate a primary assembly area prior to the start of work each day. The daily pre-designated assembly area may have to be re-designated by the SSO in the event of an emergency where the area of influence affects the primary assembly area. Once assembled, the SSO shall take a head count. The SSO will evaluate the assembly area to determine if the area is outside the influence of the situation; if not, the SSO will redirect the group to a new assembly area where a new head count will be taken.

During any site evacuation, all employees shall be instructed to observe wind direction indicators. During evacuation, employees will be instructed to travel upwind or crosswind of the area of influence. The SSO will provide specific evacuation instructions, via the site emergency radio if necessary, to site personnel regarding the actual site conditions.

12.4 MEDICAL EMERGENCY RESPONSE PLAN

At least one URS employee on site will hold a current certificate in American Red Cross Standard First Aid. This training provides six and one-half hours of Adult CPR and Basic First Aid. If a medical emergency exists, consult the emergency phone number list and request an ambulance immediately. Perform First Aid/CPR as necessary, stabilize the injured, decontaminate if necessary, and extricate only if the environment they are in is dangerous or unsafe and ONLY if the rescuers are appropriately protected for potential hazards they may encounter during the rescue. When emergency services personnel arrive, communicate all first

aid activities that have occurred. Transfer responsibility for care of the injured/ill to the emergency services personnel.

The following procedures will be implemented in the event of a personal injury:

1. Administer first-aid and call emergency who will arrange for emergency care (ambulance, paramedics).
2. When the situation has been stabilized, decontaminate the injured person. Do not perform decontamination if it interferes with emergency treatment, such as in a life-threatening situation.
3. Move the person to the support area if there is no risk of further injury.
4. Wait for emergency care, document the event in the logbook, and maintain contact with the Site Manager or SSO.
5. In the case of a minor injury requiring medical treatment, contact the project manager and then transport the injured person to the hospital.

In the event of a chemical exposure, the following procedures shall be followed:

1. **Skin Contact** - Flush with water. Remove contaminated clothing and flush affected skin. Perform first aid procedures and obtain medical attention, as appropriate.
2. **Inhalation** - Remove the person from the area. Administer first-aid/CPR, as needed. Obtain medical attention.
3. **Ingestion** - Contact the Poison Control Center for immediate treatment, then obtain medical attention. Follow the instructions from the MSDS and/or Poison Control Center if the chemical is known. Inducing vomiting may cause further injury to the victim; do not induce vomiting unless instructed to do so. Treat victim for shock.
4. **Eye Contact** - Flush eyes immediately with water for a minimum of 15 minutes. Obtain medical attention.

Immediate treatment of heat stress is imperative to prevent further injury. Persons exhibiting symptoms of heat exhaustion or heat stroke will notify their buddy and SSO immediately. Work will be stopped and first aid treatment will begin by a trained first aider. The following steps will be taken.

- Remove PPE from the individual; decontaminate if the situation is not life-threatening.
- Move the victim to a cool and shaded place.
- Cool the body with cool drinks such as water, juices, sports drinks. Apply wet, cool cloths to the body to aid in evaporative cooling; do not apply cold items (ice) which may increase the potential for shock.
- Check body pulse and temperature.
- Call for on-site medical treatment by paramedics if victim is exhibiting heat stroke symptoms.
- Transport the victim for medical treatment as quickly as feasible.

Appropriate first-aid treatment for cold stress will be provided until medical care is available. First aid procedures will include the following:

- Move the victim to a warm, sheltered area. Decontaminate the victim if the situation is not life-threatening.
- Warm the body with warm (not hot) drinks such as water, juices, sports drinks. Do not give caffeine and alcohol as these will worsen a cold stress situation by causing the blood vessels to constrict.
- Remove wet, damp clothes; put on dry clothes; wrap the victim in blankets or coats.
- For frostbite, place the affected body part in warm (100-105°F) water; do not rub the frostbitten area as this can result in tissue damage.
- Check body pulse and temperature if possible.
- Call for on-site medical treatment by paramedics if victim is exhibiting hypothermia symptoms.
- Transport the victim for medical treatment as quickly as feasible.

12.5 FIRE

Fire prevention procedures are described in Safety Management Standard 14. To protect against fires, the following special precautions must be taken:

- Before any flame-producing devices, i.e., cutting torches or welding irons, are used in the exclusion zone, the SSO must be contacted. A detailed inspection of the work area will be conducted to determine if potential fire sources exist. The fire sources must be removed to at least 35 feet away before work can commence.
- Two full 2A10B:C fire extinguishers must be located at the work area when cutting/welding is being conducted, and a fire watch will be posted.
- Upon completion of the cutting/welding activities the area will be inspected for hot metal, slag, etc. The fire watch will remain on station for at least 15 minutes after the hot work is completed.

Type ABC fire extinguishers will be available on site to contain and extinguish small fires. The local or facility fire department shall be summoned in the event of any fire on site.

In the event of a fire or explosion at the site from URS activities, the following actions shall be implemented:

1. Evacuate all personnel to a safe location upwind or crosswind of the incident.
2. Use available fire extinguishers to control the fire, if appropriate (based on the nature, size, and intensity of the fire), and it is safe to do so.
3. Concurrently with the above, contact emergency responders at 911.
4. Alert the local hospital of the possibility of fire victims, as appropriate.
5. Document the incident in the field logbook and follow the procedures for incident reporting. Take head count to account for all personnel.

12.6 SEVERE WEATHER

Personnel should be aware of the possibility for the occurrence of severe weather such as tornado, thunderstorms, hail, or high winds. Necessary precautions or response, directed by the SSO, will be taken in the event of severe weather. For example, drilling operations will be suspended when the probability for lightning occurs.

In the event of a tornado, field personnel will seek shelter in a permanent structure. No attempts will be made to outrun a tornado in a vehicle. Personnel caught in the open will lie flat in a ditch or low area and cover their head. Personnel will seek cover (building or vehicle) immediately should hail develop during thunderstorms. Local weather broadcasts will be monitored by the Site Manager, SSO, or designee when the likelihood for severe weather exists.

12.7 OPERATION SHUTDOWN

Under certain extreme hazardous situations the SSO or SSR may request that site operations be temporarily suspended while the underlying hazard is corrected or controlled. During operation shutdown, all personnel will be required to stand upwind to prevent exposure to fugitive emissions. The SSO, with concurrence from the Regional Health and Safety Manager, will have ultimate authority for operations shutdown and restart.

12.8 SPILL OR HAZARDOUS MATERIALS RELEASE

Small spills are immediately reported to the SSO and are dealt with according to the chemical manufacturer's recommended procedures found on the MSDS. Steps will be taken to contain and/or collect small spills for approved storage and disposal.

- Consider your safety and the safety of others
- Notify the site manager, SSO, and project manager of the incident and ask for assistance as appropriate
- Use defensive techniques and, if it is safe to do so, control the spread of the released material
- For a small spill, begin cleanup procedures when the situation is controlled

In the unlikely event of a larger release of hazardous materials as a result of site activities, site personnel will maintain site control until help arrives and evacuate to the predesignated assembly area. The local Designated Emergency Response Authority (DERA) will be notified by the SSO immediately and appropriate actions will be taken to protect the public health and mitigate the contaminant release. The DERA can be reached through the local police or fire department. The Site Manager will make the following emergency contacts:

Regional Health and Safety Manager -

***Carla Dods/913-344-1021
913-302-2007 (mobile)***

Project Manager -

Bob Skach/913-344-1158

EPA Response Center
(depending if RQ is exceeded)

(800) 424-8802

12.9 INCIDENT REPORT

ALL site injuries and illnesses must be reported to the SSO and PM immediately following first-aid treatment. The SSO will notify the Regional Health and Safety Manager. Work is to be stopped until the PM or SSO and RHSM have determined the cause of the incident and have taken the appropriate action to prevent a reoccurrence. Any injury or illness, regardless of severity, is to be reported. (see SMS #49).

12.10 EMERGENCY EQUIPMENT

The following items and emergency response equipment will be located within easy access at all times:

- Communications equipment, such as a mobile/cellular telephone
- First Aid Kit and Infection Control Kit:
- Eyewash – A 15 minute eyewash or an appropriate amount of portable sterile eyewash bottles will be available on site for flushing foreign particles or contaminants out of eyes.
- Drinking water
- Emergency Phone Numbers List
- Route to hospital map posted at field office and each site vehicle
- Portable radios for emergency communications in remote areas.
- Fire extinguishers (2)

Drugs, inhalants, or medications shall not be included in the First Aid Kit.

Supplies should be re-ordered as they are used. A monthly inventory must be done on the first aid kit and infection control kit contents and supplies re-ordered that have been used and not reported.

13.0 TRAINING, MEDICAL SURVEILLANCE, SITE INSPECTIONS

13.1 TRAINING AND MEDICAL SURVEILLANCE

All URS site personnel will have met the requirements of 29 CFR 1910.120(e), including:

- Forty hours of initial off-site training or its recognized equivalent
- Eight hours of annual refresher training for all personnel (as required):
- Eight hours of supervisor training for personnel serving as Site Safety Officers
- Three days of work activity under the supervision of a trained and experienced supervisor

All URS site personnel are participating in medical surveillance programs that meet the requirements of 29 CFR 1910.120(f).

Current copies of training certificates and statements of medical program participation for all URS personnel are maintained by the local office.

13.2 SAFETY BRIEFINGS

In addition, all URS site personnel will review this HSP and sign a copy of the Safety Plan Compliance Agreement, which is found in Attachment B. The PM will maintain these agreements at the site, and place them in the project file at the conclusion of the operation.

Prior to the start of operations at the site, the SSO will conduct a site safety briefing, which will include all personnel involved in site operations. At this meeting, the SSO will discuss:

- Contents of this HSP
- Types of hazards at the site and means for minimizing exposure to them
- The type of monitoring that will be performed
- Action levels for upgrade and downgrade of personal protective equipment
- Personal protective equipment that will be used
- Site-specific respiratory protection requirements
- Decontamination protocol
- Site control measures, including safe operating practices and communication
- Location and use of emergency equipment
- Evacuation signals and procedures

All site personnel, including subcontractor personnel, are to attend the briefings and sign the briefing form.

Subsequent site safety briefings will be conducted at least weekly, or whenever there is a change in task or significant change in task location. Briefings will also be conducted whenever new personnel report to the site.

13.3 SITE INSPECTIONS

The URS Site Manager or Site Safety Officer is to conduct a daily site inspection prior to the start of each shift. It is the responsibility of the Project Manager or Site Manager to resolve discrepancies immediately, contacting the Regional Health and Safety Manager if necessary for assistance. Inspections are to be documented and maintained on site until the completion of the project, at which time they are placed in the project files.

Audits may also be conducted to assess compliance with this SHERP.

14.0 RECORDKEEPING

The PM and SSO are responsible for site recordkeeping. Prior to the start of work, they will review this plan; if there are no changes to be made, they will sign the approval form (PM) or acceptance form (SSO) and forward a copy to the Regional Health and Safety Manager.

All URS personnel will review the HSP and sign a Safety Plan Compliance Agreement. Copies of these forms will be maintained in the project file.

The SSO will conduct a Site Safety Briefing in accordance with Section 13 and have all attendees sign a safety briefing form. Copies will be maintained in the project file.

Any incident or exposure incident will be investigated and the Incident Report form (SMS 049) will be completed and forwarded to the Office Human Resources Representative and the Regional Health and Safety Manager.

All instrument readings and calibrations, PPE use and changes, health and safety-related issues, and deviations from or problems with this HSP will be recorded in the field log.

TABLES

TABLE 1-1
CONTAMINANT HEALTH AND SAFETY INFORMATION
ST. LOUIS ARMY AMMUNITION PLANT, ST. LOUIS, MISSOURI

Activity	Levels of Protection		Air Monitoring ¹	Action Levels		Special Precautions
	Standard ²	Upgrade		Upgrade	Stop Work	
Site Management and Reconnaissance	D	None	None	None	None	
Surveying	D	Modified D	None	Surface Contamination		
Refractory Brick Sampling	D	C	Dust	2 mg/m ³	10 mg/m ³	
Surface Soil Sampling	D/Modified D	Modified D/C	Dust	2 mg/m ³	10 mg/m ³	
Subsurface Soil Sampling	D/Modified D	Modified D/C	Dust	2 mg/m ³	10 mg/m ³	Drilling
Surface Water/Sediment Sampling	D/Modified D	Modified D/C	multigas	None	19.5% O ₂ 10% LEL	Water
Video Surveys of Sewer System	D/Modified D		multigas	None	19.5% O ₂ 10% LEL	
Trenching/Excavations	Modified D	C	multigas	2 mg/m ³	10 mg/m ³	Heavy Equipment

1 Upgrade from Level D to Modified D will be based on visible contamination, odors, or air monitoring results

FIGURES

Route to Hospital

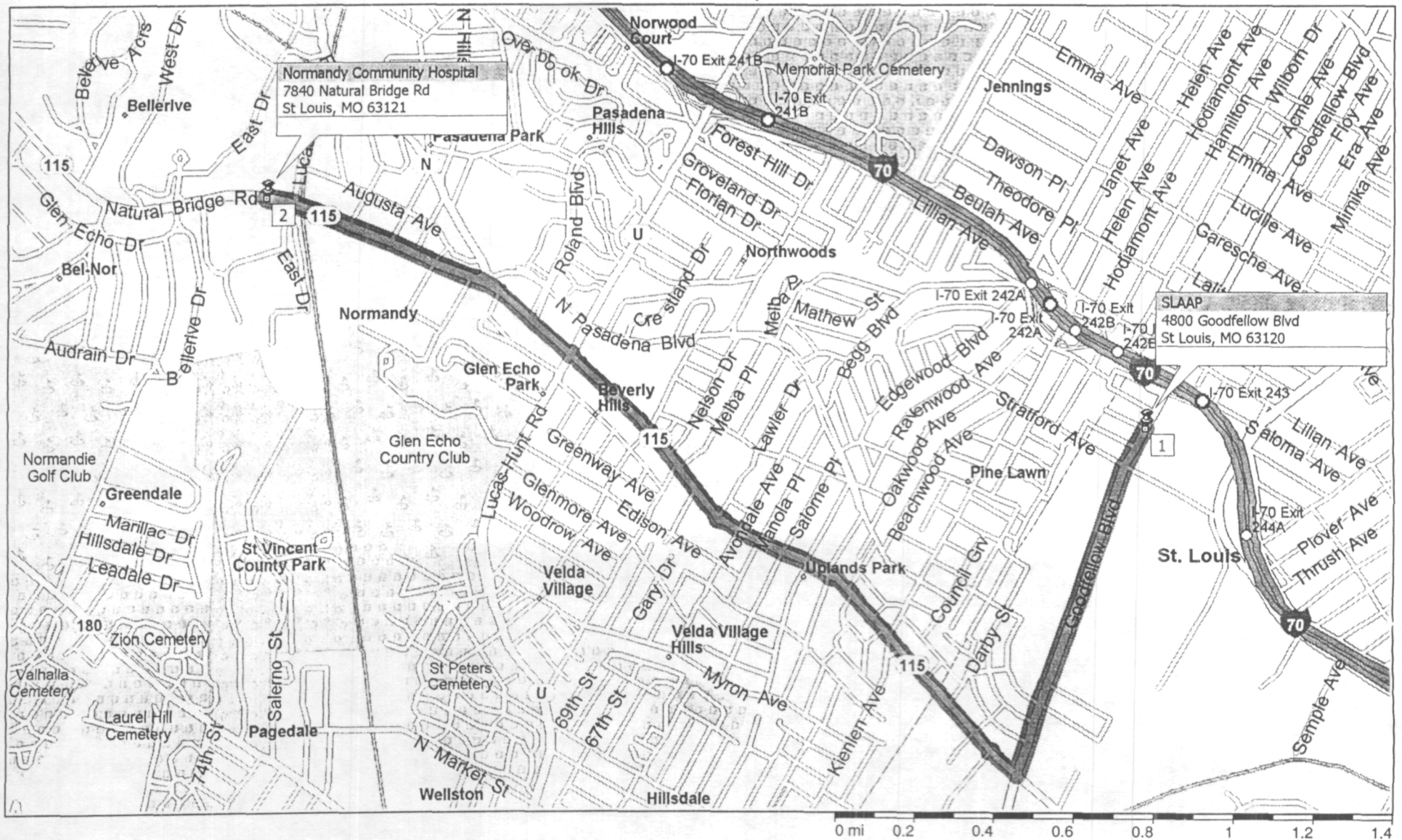


FIGURE 1-1

ATTACHMENT A

URS SAFETY MANAGEMENT STANDARDS

URS SAFETY MANAGEMENT STANDARD

Worker Right-to-Know (Hazard Communication)

1. Applicability

This procedure applies to URS office and field operations.

2. Purpose and Scope

The worker right-to-know program provides URS personnel with information and training about safety and health hazards associated with the chemicals they might encounter in the workplace. This procedure describes how chemical safety hazards are communicated to URS personnel working in offices and at field site locations, and how information is to be provided to employees of other employers working at the location. The requirements include steps to acquire this information, maintain it, and train everyone to use it.

3. Implementation

Office Locations: Implementation of this program is the responsibility of the Office Manager.

Field Activities: Implementation of this program is the responsibility of the Project Manager.

4. Requirements

A. Hazardous Material Inventory

1. Maintain a hazardous material inventory that lists all of the hazardous materials used at this workplace. Use chemical names consistent with the applicable MSDS's.
2. File a copy of the chemical inventory in the Safety Filing System.

B. Material Safety Data Sheets (MSDS's)

1. Obtain a MSDS for each chemical before it is used.
2. Review each MSDS when it is received to evaluate whether the information is complete and to determine if existing protective measures are adequate.
3. Maintain a collection of all MSDS's where they are accessible at all times.

URS SAFETY MANAGEMENT STANDARD

Worker Right-to-Know (Hazard Communication)

4. Replace MSDS sheets when updated sheets are received. Communicate any significant changes to those who work with the chemical.
5. MSDS's are required for all hazardous materials used on site by project personnel.

C. Labels

Label all chemical containers with:

1. Identity of the hazardous chemical(s),
2. Appropriate hazard warnings, and
3. Name and address of the chemical manufacturer, importer, or other responsible party.

D. Hazardous Nonroutine Tasks

Periodically, employees are required to perform hazardous non-routine tasks. Prior to starting work on such projects, provide each employee with information about hazards to which they may be exposed during such an activity.

This information will include:

1. Specific chemical hazards.
2. Protective/safety measures which must be utilized.
3. Measures that have been taken to lessen the hazards including ventilation, respirators, presence of another employee and emergency procedures.

E. Informing Contractors/Subcontractors

Provide contractors/subcontractors the following information on chemicals used by or provided to URS personnel:

1. Names of hazardous chemicals to which they may be exposed while on the jobsite.
2. Precautions the employees may take to lessen the possibility of exposure by usage of appropriate protective measures.

URS SAFETY MANAGEMENT STANDARD

Worker Right-to-Know (Hazard Communication)

3. Location of URS MSDS's and written chemical inventory.

F. Training

1. Conduct training of all employees potentially exposed to hazardous materials on the following schedule:
 - a. Before new employees begin their jobs.
 - b. Whenever new chemicals are introduced into the workplace,
or
 - c. Annually thereafter.
2. This training will include:
 - a. Applicable regulatory requirements.
 - b. Names of those responsible for implementing this program.
 - c. Location of the program, inventory and MSDS 's.
 - d. Chemicals used, and their hazards (chemical, physical and health).
 - e. How to detect the presence or release of chemicals.
 - f. Safe work practices.
 - g. How to read an MSDS.
3. Document the training.

5. Documentation Summary

A. File these records in the Office Safety Filing System

1. Chemical Inventory.
2. Location of the MSDS inventory.
3. Training records.
4. Contractor/Subcontractor notifications.

B. File these records in the Project Safety File.

URS SAFETY MANAGEMENT STANDARD
Worker Right-to-Know (Hazard Communication)

1. Chemical Inventory.
2. Location of the MSDS inventory.
3. Training records.
4. Contractor/Subcontractor notifications.

6. Resources

- A. U.S. OSHA Technical Links - Hazard Communication
(<http://www.osha-slc.gov/SLTC/hazardcommunications/index.html>)
- B. U.K. - Control of Substance Hazardous to Health - Regulations

URS SAFETY MANAGEMENT STANDARD

Confined Space Entry

1. Applicability

This procedure applies to URS projects involving confined space entry operations.

2. Purpose and Scope

This procedure is intended to protect personnel from the hazards associated with confined space entry.

A confined space is:

1. Large enough for personnel entry, and
2. Has limited or restricted means for entry or exit, and
3. Is not designed for continuous occupancy.

A Non-Permit space is a confined space that does not present any potential hazards, nor will the work performed therein create a hazardous condition.

A Permit-Required space is a confined space that may present one or more potential hazards including hazardous atmospheres, fire/explosion, engulfment, entrapment, electrical, mechanical, or any other serious hazard. (Note for Australian operations - all confined space entries require a permit)

Permit required confined space hazards include risks of asphyxiation, fire or explosion, chemical exposure, engulfment or drowning, electrocution, or dismemberment. Examples include, but are not limited to, sewers, utility vaults, tanks, sump pits, and excavations where there is the potential for atmospheric hazards.

This procedure applies to all permit required confined space entry activities performed by URS or any contractor and/or subcontractor.

Entry occurs whenever any body part crosses the plane of entry of the space.

3. Implementation

Field Operations - Implementation of this program is the responsibility of the Project Manager and Entry Supervisor.

4. Requirements

URS SAFETY MANAGEMENT STANDARD

Confined Space Entry

A. Appoint an Entry Supervisor who:

1. Determines whether a space is a "permit required" or non permit space.
2. Is responsible for onsite verification of acceptable entry conditions prior to entry.
3. Is responsible for assigning appropriately trained and medically qualified personnel to the project.
4. Has knowledge of required confined space entry equipment.
5. Has the ability to recognize and test hazardous atmospheres.
6. Is capable of performing a thorough hazard evaluation of the space and of the work that will be performed therein.
7. Understands how to execute a Confined Space Permit as well as any other required permit, such as a Hot Work permit.
8. Has authority to stop work and take corrective actions when conditions change.
9. Has had formal, documented training as a confined space Entry Supervisor.

B. Permit System

1. Utilize the "Confined Space Entry Permit and Procedures" form, Attachment 10-1, for permit space entry evaluation and establishment of required entry parameters.
2. Require confined space entry permits to be issued at least each shift by the Entry Supervisor.

C. Planning for Confined Space Entry

1. The Entry Supervisor:
 - a. Contacts the facility representative to gather information about the confined space and to determine if the facility has any entry requirements that must be followed.

URS SAFETY MANAGEMENT STANDARD

Confined Space Entry

- b. Performs a Hazard Evaluation using the Confined Space Permit and Procedures for Entry Form, Attachment 10-1.
- c. Determines whether the space is a "permit required confined space" or a non-permit required confined space.
- d. Assesses whether those hazards that create the "permit required confined space" can be eliminated without employee entry into the space. By eliminating hazards that are immediately dangerous to life or health, administrative and rescue requirements are lessened and risk to workers is reduced.
- e. Determines rescue requirements for the space - if so designated as a "permit required confined space".
- f. Arranges for qualified Entrants and Attendants.
- g. Obtains blank Confined Space Entry and Hot Work (if applicable) permit forms.
- h. Identifies all equipment, including personal protective equipment, needed for the job.
- i. Obtains all equipment and verifies that it is functional.
- j. Coordinates confined space entry activities with other site employers on site that may be affected by the entry. Will provide contractors with a copy of this written program.

D. Site Confined Space Preparation

1. Space Isolation

- a. Verify the confined space is drained and cleaned.
- b. Isolate the confined space as described on the Hazard Evaluation form or other applicable written procedures.
- c. Isolate all forms of potential energy inside the confined space, including:
 - 1. Electrical
 - 2. Mechanical

URS SAFETY MANAGEMENT STANDARD

Confined Space Entry

3. Thermal

4. Pneumatic

5. Hydraulic

- d. Isolate all lines carrying fuels, liquids or gases into the space.
- e. Develop alternate procedures for protection of entrants for lines, which may not be controlled such as lines through stormwater or sewer vaults.
- f. Open the entry point to the confined space.
- g. Provide barricades and post the entrance of the space with a sign stating "Danger Confined Space Do Not Enter" or equivalent wording.

2. Electrical Equipment

- a. Provide electrical equipment that meets the electrical classification of the area. See SMS 12, "Electrical Safety".
- b. Route all portable electrical equipment through ground fault circuit interruption (GFCI) devices.

3. Atmospheric Tests

- a. Calibrate monitoring equipment before and after sampling and record information on the Daily Instrument Calibration Form.
- b. Make initial atmospheric tests of the space with ventilation OFF.
- c. Attach extension probes to the monitoring equipment, or lengths of silicone or similarly inert tubing material, to reach the bottom of the space. For horizontal spaces, the probe may need to be attached to a pole.
- d. Take atmospheric measurements in several locations (bottom, middle, top, corners) allowing extra response time

URS SAFETY MANAGEMENT STANDARD

Confined Space Entry

from the instrumentation to register, especially if a tubing extension is used.

- e. Obtain reading for oxygen first, followed by %LEL, then for other contaminants of concern (if applicable).
- f. Record all results on the permit and sign and initial where indicated.
- g. Determine if acceptable entry conditions exist with respect to oxygen, %LEL, other hazardous atmospheres.
- h. If unacceptable entry conditions are indicated, correct the limiting condition.
- i. If acceptable entry conditions exist, determine times that the monitoring will be repeated or if continuous monitoring will be needed.
- j. Monitor continuously for oxygen and %LEL if hot work will be performed in the space.

4. Ventilation

- a. Mechanical ventilation is required for all Permit entries.
- b. Open as many openings as possible in the space to aid in cross ventilation.
- c. Never ventilate confined spaces with oxygen.
- d. Provide five (5) air changes per hour, or at least 10,000 cfm for large spaces.
- e. If a generator is used to provide power, be sure that the exhaust does not enter the space. Carbon monoxide monitoring may be required.
- f. Place blower ductwork such that it does not create a hazard by impairing the line of vision of attendants to observe space entrants, or by blowing contaminants to other workers.

URS SAFETY MANAGEMENT STANDARD

Confined Space Entry

- g. Provide at least 2,000 cfm of active exhaust ventilation for each welder or torch operating under a Hot Work Permit within the space.
- h. Use fire/explosive proof ventilating equipment that is properly grounded when exhausting flammable gases, vapors and dusts from confined spaces.

5. Authorizing the Permit

- a. The Entry Supervisor personally inspects the work area and signs the permit after confirming that all necessary precautions have been taken and all relevant information concerning the entry parameters are documented on the permit.
- b. Conduct a briefing informing all entrants and attendants of space conditions.
- c. Require entrant(s) and attendant(s) to each print their names and sign the permit.
- d. Affix the permit to a location near the space entrance.

E. Entry Operations

- 1. Prohibit entry when oxygen deficient or flammable atmospheres are present in the space.
- 2. Limit entry to qualified entrants listed on the permit and only for the purpose stated on the permit.
- 3. Require entrants to follow all requirements listed on permit.
- 4. Attach body harness, if required, to a lifeline, and the other end of the life line is attached to a fixed point or to a mechanical lifting device outside the space at all times the entrant(s) are in the space.
- 5. Require that the attendant(s) remain at the entrance whenever an entrant is inside the confined space. The attendant may not be assigned other duties that may distract him/her from maintaining uninterrupted contact with the entrant(s). The attendant may only attend to one confined space entry at any one time. Each space must have its own attendant.

URS SAFETY MANAGEMENT STANDARD

Confined Space Entry

F. Exiting the Confined Space

1. Attendant will order entrant(s) out of space whenever:
 - a. A prohibited condition on the entry permit develops.
 - b. The surrounding work area becomes unsafe.
 - c. Any monitoring instrumentation, rescue equipment, ventilation, etc. becomes compromised.
 - d. Possible symptoms of exposure are noted in the entrant(s).
 - e. Entrant(s) express any type of concern regarding the safety of the entry.

G. Rescue

1. Require non-entry rescue procedures to be used for every entry. Typically, non-entry rescue will require the use of a tripod and winch, lanyard, and full body harness.
2. Contract for qualified entry rescue services when non-entry rescue is not feasible in permit required confined spaces. Entry rescue must staged on site adjacent to the space for the duration of the entry.

H. When the Entry Work is Complete

Cancel the permit by obtaining the signature of the entry supervisor and recording the time and date on the permit. This should be accomplished after the space is resealed and signs and barricades removed. If the space cannot be closed until a later time, provisions must be maintained (barricades, warning signs) to discourage persons from entering the space.

I. Audits of the Confined Space Entry Program

Annual audits of this Safety Management Standard will be conducted in accordance with the procedures set forth in the URS HSMS.

The Project Manager will require compliance with this SMS by reviewing Entry Permits on a weekly basis and document this review by notation on the permits.

URS SAFETY MANAGEMENT STANDARD

Confined Space Entry

J. Training

Require Entry Supervisors, Entrants, and Attendants to be trained to adequately address all health and safety aspects associated with entry.

K. Medical Surveillance

All Entry Supervisors, Entrants, and Attendants will be participants in the Regional medical surveillance program and medically qualified for confined space entry work.

5. Documentation Summary

Records required in the Project Safety File

- A. Entry supervisor, Entrant and Attendant qualifications.
- B. Confined Space Entry Permits plus Hot Work Permits (if issued).
- C. Monitoring equipment calibration logs.
- D. Lock-out/Tag-out records (if used).
- E. Daily worker briefing documentation.
- F. Medical clearance documentation.

6. Resources

- A. U.S. OSHA Standard - Permit Required Confined Spaces - 29 CFR 1910.146
- B. U.S. OSHA Technical Links - Confined Spaces
- C. U.K. - Factories Act
- D. Australian Standards AS 2865-1995. Safeworking in a Confined Space
- E. Worksafe Australia - Working in Confined Spaces
- F. US Army Corp of Engineers - EM 385-1-1, Section 06.I.
- G. Attachment 10-1 - Confined Space Permit and Procedures for Entry

URS Corporation

CONFINED SPACE PERMIT & PROCEDURES FOR ENTRY

Confined Space Name:	No.:
Confined Space Location:	Date:
Entry Authorized By:	Time Issued:
	Time expires:

Reason(s) for Entry	Hazards

ISOLATION

Equipment to Lock/Tag/Test (including blocking, blanking, and/or disconnecting electrical, hydraulic, pneumatic, kinetic, thermal, steam, chemical, springs):

Equipment Name:	Isolated by:	Location:	Done

ENTRY REQUIREMENTS:	Required	Checked		Required	Checked
Eye Protection			Hot Work Permit		
- Safety Glasses			Communications		
- Goggles			Air Mover(s)		
- Face Shield			Rescue Hoist and Other Related Equipment		
Hearing Protection			Rescue Lanyard		
Fall Protection			GFCI Protected Electrical		
Respiratory Protection			Explosion Proof Lighting/Electrical		
- 1/2 Face Disposable			Non-sparking Tools		
- 1/2 Face Cartridge			Ladders		
- Full Face			Blocking/Blanking Equipment		
- Powered Air Purifying			Air Monitoring		
- Supplied Air			- Oxygen		
Gloves Type			- Combustibles		
Boots Type			- Carbon monoxide		
Clothing Type			- Hydrogen sulfide		
Hard Hat			- Dust		
Other			- Other		

Comments:

Atmospheric Testing	Pre-Entry		Continuous		Record readings every 30 minutes (minimum)			
	Needed	Time: Results/Initials	Needed	Time: Results/Initials	Time: Results/Initials	Time: Results/Initials	Time: Results/Initials	Time: Results/Initials
Oxygen (19.5-23.5%)								
Combustibles(<10%LEL)								
Carbon Monoxide (<35 ppm)								
Hydrogen Sulfide (<2 ppm)								
dust (visibility > 10')								
other								
other								

Note: Sign the permit and authorize entry only when the atmospheric conditions meet the permissible entry levels shown for a minimum period of 30 minutes prior to entry.

Name of Tester:

Signature:

Testing Equipment Used	Type	Model	I.D. Number

Emergency Action Plan:

Authorization	Signature	Time/Date
Entry Supervisor: (print) I Certify that the requirement of this confined space entry permit have been met and I authorize entry into the confined space to which this permit applies.		
Relief Entry Supervisor: (print) I Certify that the requirement of this confined space entry permit have been met and I authorize entry into the confined space to which this permit applies.		
Entrants(s): (print)		
Attendant(s): (print)		

Permit Canceled by: _____ Date: _____ Time: _____
 Permit was cancelled because (check one): (i) Work has been completed ____ (ii) The permit has expired ____ (iii) Emergency (specify) _____

URS SAFETY MANAGEMENT STANDARD

Excavation Safety

1. Applicability

This procedure applies to projects where URS controls trenching and excavation activities, and/or where URS employees are exposed to hazards associated with trenching and excavation activities.

2. Purpose and Scope

This procedure is intended to protect personnel from the hazards associated with excavation entry activities.

3. Implementation

Field Operations - Implementation of this program is the responsibility of the Project Manager.

4. Requirements

A. Competent Person

Appoint an Excavation Competent Person when URS controls excavation activities. The Excavation Competent Person:

1. Is responsible for conducting daily inspections of excavation, adjacent areas, and protective systems prior to each shift.
2. Is responsible for inspection after every rainstorm or other hazard.
3. Must have knowledge of soils and soil classification.
4. Understands design and use of protective systems.
5. Has authority to stop work and take corrective actions when conditions change.
6. Has the ability to recognize and test hazardous atmospheres.
7. Has formal documentation of training as an Excavation Competent Person.
8. Is physically located at the excavation while work is in progress.

B. Access/Egress

URS SAFETY MANAGEMENT STANDARD

Excavation Safety

1. Trench excavations will have ramps or ladders within 25 feet (8 meters) of the entrants.

C. Soil Classification

Soil classifications must be conducted in accordance with Attachment 13-1. For the purposes of this standard all soils will be classified by a person meeting the qualifications of a competent person as described in 29 CFR 1929 subpart P. The competent person shall consult with a Registered Professional Engineer in the event the soil classification requires additional technical expertise.

D. Protective Systems

Protect employees in excavations deeper than 4 feet (1.2 meters) by means of properly designed protective systems. All protective systems must comply with 29 CFR 1926 Subpart P Appendices B, D, and E.

1. Sloping and Benching

See Attachment 13-2

2. Timber Shoring for Trenches

Timber shoring for trenches must be designed and stamped by a Registered Professional Engineer in accordance with 29CFR Subpart P, Appendix C.

3. Aluminum Hydraulic Shoring for Trenches

Aluminum hydraulic shoring for trenches must be approved by a Registered Professional Engineer in accordance with 29CFR 1926 Subpart P, Appendix D.

4. Alternatives to Timber Shoring

Trench shields and boxes must be either premanufactured with listed load ratings or designed, stamped and constructed under the direction of a Registered Professional Engineer.

5. Protective systems designed to protect employees in excavations deeper than 20 feet (6.1 meters) must be designed and stamped by a Registered Professional Engineer.

URS SAFETY MANAGEMENT STANDARD

Excavation Safety

6. Excavations will be clearly identified and barricaded to keep unauthorized individuals out.

E. Permit Authorization and Inspections

1. Use the Excavation Authorization Form (Attachment 13-3) of this procedure that requires the following issues to be addressed:
 - a. Employee training/briefings.
 - b. Electrical safety.
 - c. Surface encumbrances.
 - d. Underground installations and utilities.
 - e. Protective systems.
 - f. Access and egress.
 - g. Exposure to vehicular traffic.
 - h. Exposure to falling loads.
 - i. Warning systems for mobile equipment.
 - j. Testing for hazardous atmospheres.
 - k. Emergency rescue equipment.
 - l. Protection from hazards associated with water accumulation.
 - m. Stability of adjacent structures.
 - n. Protection of employees from loose rock.
 - o. Inspections.
 - p. Fall protection.
2. Require daily inspections of excavations to be conducted by Competent Person using Attachment 13-4.

F. Training/Briefings

URS SAFETY MANAGEMENT STANDARD

Excavation Safety

Conduct daily safety briefings for all employees associated with excavation activities and document on Attachment 13-3. Discuss excavation hazards, protective measures, and work practices that will be applicable to the day's activities.

5. Documentation Summary

Records required for the Project Safety File:

- A. Competent person qualifications.
- B. Excavation Authorization Form.
- C. Daily Competent Person inspections.
- D. Daily worker briefing documentation.
- E. Daily inspection records.

6. Resources

- A. U.S. OSHA Standard - Excavations - 29 CFR 1926, Subpart P
 - 1. Appendix B, Sloping and Benching
 - 2. Appendix C, Timber Shoring
 - 3. Appendix D, Aluminum Hydraulic Shoring
- B. U.S. OSHA Technical Links - Trenching and Excavation

The following documents are PDF files requiring the use of Adobe Acrobat reader.

- C. US Army Corp of Engineers projects, the requirements of EM 385-1-1, Section 25 (PDF file)
- D. Attachment 13-1 - Soils Classification
- E. Attachment 13-2 - Simple Slopes
- F. Attachment 13-3 - Excavation Authorization Form
- G. Attachment 13-4 - Daily Excavation/Trench Inspection Form

"Type A" soils

Are cohesive soils with an unconfined, compressive strength of 1.5 ton per square foot (tsf) (144kPa) or greater.

Examples of cohesive soils are: clay, silty clay, sandy clay, clay loam and, in some cases, silty clay loam and sandy clay loam. Cemented soils such as caliche and hardpan are also considered Type A.

However, no soil is Type A if:

- i. The soil is fissured; or
- ii. The soil is subject to vibration from heavy traffic, pile driving, or similar effects; or
- iii. The soil has been previously disturbed; or
- iv. The soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or greater; or
- v. The material is subject to other factors that would require it to be classified as a less stable material.

"Type B" soils are:

- i. Cohesive soil with an unconfined compressive strength greater than 0.5 tsf (48 kPa) but less than 1.5 tsf (144 kPa); or
- ii. Granular cohesionless soils including: angular gravel (similar to crushed rock), silt, silt loam, sandy loam and, in some cases, silty clay loam and sandy clay loam.
- iii. Previously disturbed soils except those which would otherwise be classed as Type C soil.
- iv. Soil that meets the unconfined compressive strength or cementation requirements for Type A, but is fissured or subject to vibration; or
- v. Dry rock that is not stable; or
- vi. Material that is part of a sloped, layered system where the layers dip into the excavation on a slope less steep than four horizontal to one vertical (4H:1V), but only if the material would otherwise be classified as Type B.

"Type C" soils are:

- i. Cohesive soil with an unconfined compressive strength of 0.5 tsf (48 kPa) or less; or
- ii. Granular soils including gravel, sand, and loamy sand; or
- iii. Submerged soil or soil from which water is freely seeping; or
- iv. Submerged rock that is not stable, or
- v. Material in a sloped, layered system where the layers dip into the excavation or a slope of four horizontal to one vertical (4H:1V) or steeper.

SIMPLE SLOPES

MAXIMUM ALLOWABLE SLOPES
SOIL OR ROCK TYPE
MAXIMUM ALLOWABLE SLOPES (H:V)¹
FOR
EXCAVATIONS LESS THAN 20 FEET DEEP³

STABLE ROCK	VERTICAL (90 Deg.)
TYPE A ²	¾:1 (53 Deg.)
TYPE B	1:1 (45 Deg.)
TYPE C	1 ½:1 (34 Deg.)

¹ Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angles have been rounded off.

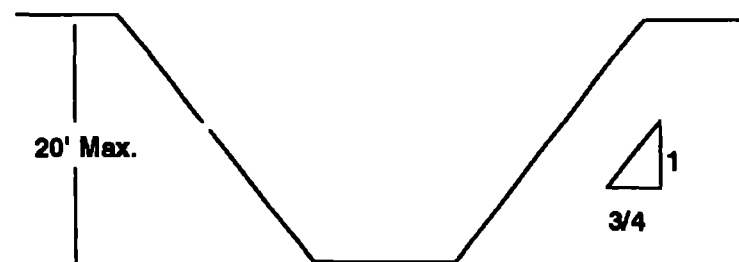
² A short-term maximum allowable slope of 1½H:1V (63 degrees) is allowed in excavation in Type A soil that are 12 feet (3.67 m) or less in depth. Short-term maximum allowable slopes for excavations greater than 12 feet (3.67 m) in depth shall be ¾H:1V (53 degrees).

³ Sloping or benching for excavations greater than 20 feet deep shall be designed by a registered professional engineer.

Slope Configurations (All slopes stated below are in the horizontal to vertical ratio)

Excavations Made in Type A Soil

All simple slope excavation 20 feet or less in depth shall have a maximum allowable slope of ¾:1.

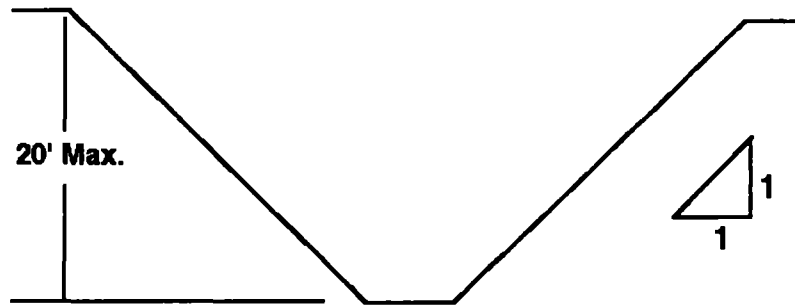


SIMPLE SLOPE - GENERAL

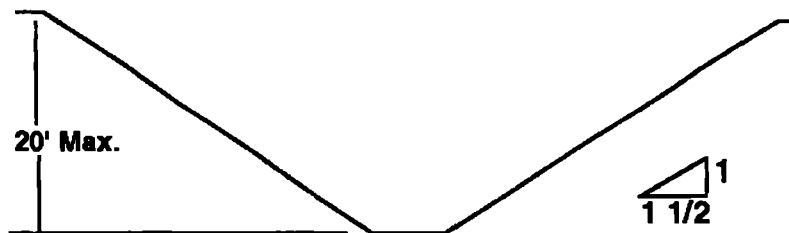
Exception: Simple slope excavations which are open 24 hours or less (short term) and which are 12 feet or less in depth shall have a maximum allowable slope of ½:1.

SIMPLE SLOPES**Excavations Made in Type B Soil**

All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1.

**SIMPLE SLOPE****Excavations Made in Type C Soil**

All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1½:1.

**SIMPLE SLOPE**



Health and Safety Program
**EXCAVATION / TRENCHING
AUTHORIZATION**

Attachment 13-3

**POST AT LOCATION
(GOOD FOR ONE WEEK ONLY)**

Authorization No. _____ Authorization From _____ To _____

Competent Person: _____

Project Name: _____ Project Location: _____

Description of Job or Special procedures: _____

Check Yes, No, or N/A
for Not Applicable

EMPLOYEE TRAINING AND PRE-EXCAVATION BRIEFING

1. Safe Excavation and Rescue Training Conducted on:	Date:			
2. Mandatory pre-excavation briefing conducted on:	Date:			
		Yes	No	N/A
3. Does this job require special training?		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

ELECTRICAL SAFETY

	Yes	No	N/A
1. Are all electrical devices grounded, double insulated, or GFCI protected?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Have all power cords and tools been visually inspected?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

SURFACE ENCUMBRANCES

1. Have all surface encumbrances that are located so as to create a hazard to employees been removed or supported, as necessary, to safeguard employees?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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UNDERGROUND INSTALLATIONS

1. Have the estimated locations of all underground installation been determined prior to excavation?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Have utility companies been contacted and advised of proposed work?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Are underground installations protected, supported or removed while excavations are open?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

PROTECTIVE SYSTEMS

1. Excavation slopes comply with Type C Soil Classification?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. If no to question 1, has soil been examined and been determined to be other than Type C soil by a Competent Person?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. If protective measures beyond sloping are required, do they meet OSHA Appendix standards?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**EXCAVATION / TRENCHING
AUTHORIZATION**

	Yes	No	N/A
4. If no to question 3, has the protective system been designed and stamped by a Registered Professional Engineer?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

MEANS OF EGRESS FOR TRENCHES DEEPER THAN 4 FEET

1. Are stairways, ladders, or ramps provided every 25 feet?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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ACCESS AND EGRESS

1. Are structural ramps that are used solely by personnel as a means of access or egress from excavations designed by a competent person?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Are ramps and runways constructed so structural members are connected to prevent displacement?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Are structural ramps that are used for access and egress of equipment designed by a competent person qualified in structural design and constructed in accordance with the design?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Are structural members used for ramps and runways of uniform thickness?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Are cleats used in connecting runway structural members attached in a manner to prevent tripping?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Are structural ramps used in lieu of steps provided with cleats or other surface treatment to prevent slipping?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

EXPOSURE TO VEHICULAR TRAFFIC

1. Are personnel exposed to public vehicular traffic wearing reflectorized or high visibility vests?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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EXPOSURE TO FALLING LOADS

1. Are employees prohibited from standing underneath loads handled by lifting or digging equipment?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Are employees prohibited from standing next to vehicles being loaded or unloaded?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

WARNING SYSTEMS FOR MOBILE EQUIPMENT

1. Are warning systems such as barricades, hand or mechanical signals, or stop logs utilized when mobile equipment is operated adjacent to or at the edge of an excavation?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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TESTING FOR HAZARDOUS ATMOSPHERES

1. Are the atmospheric hazards that can be reasonably expected to exist in excavations greater than 4 feet deep tested and controlled?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	READING:	TIME:	INITIAL:
2. Test of Oxygen Content:	_____ % O ₂ (19.5% Minimum)	_____	_____
3. Test for Flammable Concentrations:	_____ % LEL (10% Maximum)	_____	_____
4. Test for Toxic Concentration:	_____ %PPM of _____	_____	_____

**EXCAVATION / TRENCHING
AUTHORIZATION**

	Yes	No	N/A
5. Is testing conducted as often as necessary to ensure safety personnel?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

EMERGENCY RESCUE EQUIPMENT

1. Is emergency rescue equipment such as SCBA, safety harness and line, or basket stretcher readily available and attended when hazardous atmospheric conditions exist?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Are employees who enter bell-bottom pier holes or other similar deep and confining excavations wearing a body harness with a life-line?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

PROTECTION FROM HAZARDS ASSOCIATED WITH WATER ACCUMULATION

1. Are employees prohibited from entering excavations that have accumulated water?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Is water being controlled or prevented from accumulating in excavation by the use of water removal equipment?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Is water control equipment operation being monitored by a competent person?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Are diversion ditches, dikes, or other suitable means used to prevent surface water from entering excavation?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Are excavations subjected to run-off from heavy rain immediately re-inspected by a competent person?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

PROTECTION OF EMPLOYEES FROM LOOSE ROCK OR SOIL

1. Is adequate protection provided to protect employees from loose rock or soil that could pose a hazard by falling or rolling from an excavation face?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Are employees protected from excavated or other material and equipment by placing this material a minimum of two (2) feet from the edge of excavations or by the use of retraining devices?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

STABILITY OF ADJACENT STRUCTURES

1. Are support systems such as shoring, bracing, or underpinning provided to ensure stability of adjoining structures (i.e., buildings, walls) endangered by excavation activities?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Has any excavation below the level of the base or footing of foundations or retaining walls been:			
• Provided with a support system such as under pinning to ensure the safety of employees and stability of the structure?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Performed in stable rock?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Determined by a registered professional engineer that the structure is sufficiently removed from the excavation so as to be unaffected by the excavation activity?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• Determined by a registered professional that the excavation work will not pose a hazard to employees?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Is the undermining of sidewalks and pavement structures prohibited?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

INSPECTIONS

1. Are daily inspections of excavations where employee exposure can be reasonably anticipated being done by the competent person?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Are inspections being performed by a competent person after every rainstorm or other hazard increasing occurrence?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Are employees removed from the excavation if the competent person finds evidence at any time of a situation that could result in a possible cave-in, protective system failure, hazardous atmosphere or other hazardous condition?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Health and Safety Program
**EXCAVATION / TRENCHING
AUTHORIZATION**

Attachment 13-3

	Yes	No	N/A
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FALL PROTECTION

1. Are standard guardrails provided on walkways and bridges that cross over excavations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Are all remotely located excavations adequately barricaded or covered?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Are temporary wells, pits, shafts and similar exploratory operations backfilled upon completion?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I have inspected the excavation described in this authorization:

Signature of Competent Person

Date



Health and Safety Program

Attachment 13-4

**DAILY EXCAVATION / TRENCH
INSPECTION REPORT**

Competent Person: _____ Date: _____

Project Name: _____ Weather Conditions: _____

Project Location: _____ Rainfall Amounts
24 hours Previous: _____

"I hereby attest that the following conditions existed and that the following items were checked or reviewed during this inspection".

Check Yes, No or N/A for Not Applicable. If comment is required, circle the number and see Page 2.

		Yes	No	N/A
1.	Are barricades or covers in place and in good condition?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.	Have any tension cracks observed along top on any slopes?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3.	Is excavated material at least 2' from the edge of the excavation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.	Are slopes cut at design angle of repose?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.	Is any water seepage noted in trench walls or bottom?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.	Are pumps in place or available if needed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.	Is bracing system installed in accordance with design?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.	Is there evidence of significant fracture planes in soil or rock?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9.	Is there any evidence of caving or sloughing of soil since the last inspection?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10.	Are there any zones of unusually weak soils or materials not anticipated?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11.	Are there any noted dramatic dips or bedrock?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12.	Are all short-term trench(s) covered within 24 hours?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13.	Have non-compliance items been photographed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14.	Are hydraulic shores pumped to design pressure?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15.	Is shoring being used secure?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16.	Does plan include adequate safety factor for equipment being used?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17.	Is traffic adequately away from trenching operation?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18.	Are barricade up and secure?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19.	Are there trees, boulders or other hazards in area?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20.	Is vibration from equipment or traffic too close to trenching operation?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21.	Are trench box(s) certified?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22.	Are GFCI's used on ALL temporary electrical cords?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23.	Is access and egress located every 25 feet?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24.	Is hazardous testing done on a regular basis?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25.	Has rescue procedure been established and is equipment immediately available?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Health and Safety Program

Attachment 13-4

**DAILY EXCAVATION / TRENCH
INSPECTION REPORT**

Comments: Place question number in front of applicable comment.

URS SAFETY MANAGEMENT STANDARD

Fire Prevention

1. Applicability

This procedure applies URS office and project locations.

2. Purpose and Scope

The purpose of this procedure is to reduce/eliminate potential fire hazards in the workplace and to provide for a rapid, effective response should a fire occur.

3. Implementation

Office Locations – Implementation of this procedure is the responsibility of the Office Manager.

Field Activities – Implementation of this procedure is the responsibility of the Project Manager.

4. Requirements

General

- A. Develop an Emergency Action Plan as outlined in SMS 3, "Emergency Action Plans."
- B. Maintain good housekeeping to reduce fire hazards and to provide safe routes of egress should a fire occur.
- C. Provide the appropriate number and types of fire extinguishers for the operations being performed. Refer to Attachment 14-1 for guidance.
- D. Inspect fire extinguishers monthly and maintain an inspection log.
- E. Conduct frequent periodic inspections to identify fire hazards such as:
 - 1. Unnecessary accumulation of combustibles.
 - 2. Unnecessary storage of flammables.
 - 3. Sources of ignition (e.g., faulty wiring, sparks, open flame, etc.).
- F. Remove all fire hazards promptly.
- G. Prohibit smoking and other ignition sources in flammable storage and other fire hazard areas.

URS SAFETY MANAGEMENT STANDARD

Fire Prevention

- H. Post emergency numbers near telephones and evacuation maps in appropriate locations.
- I. Conduct evacuation drills.
- J. Train employees in:
 - 1. Fire hazard recognition.
 - 2. Fire hazard prevention.
 - 3. Fire extinguisher use.
 - 4. Emergency and evacuation procedures.

6. Documentation Summary

File the following in the Office/Project Health and Safety File:

- A. Emergency Action Plans.
- B. Fire extinguisher inspection logs.
- C. Employee training documentation.
- D. Site audits.
- E. Evacuation drills.

7. Resources

- A. U.S. OSHA Standard - Means of Egress - 29 CFR 1910, Subpart E
- B. U.S. OSHA Standard - Employee Emergency Plans and Fire Prevention Plans - 29 CFR 1910.38
- C. U.S. OSHA Standard - Fire Protection - 29 CFR 1910, Subpart L
- D. U.S. OSHA Technical Links - Fire Safety
- E. U.S. OSHA Construction Standard - Fire Protection and Prevention 29 CFR 1926, Subpart F
- F. U.K. - "Fire Precaution" Regulations

URS SAFETY MANAGEMENT STANDARD
Fire Prevention

- G. Australian Standards AS 1851.1-1995 - Maintenance of Fire Protection Equipment - Portable Fire Extinguishers and Blankets
- H. Australian Standards Collection 15 - Fire Extinguishing Equipment
- I. USACE EM 385-1-1 Section 9 - Fire Prevention and Protection
- J. Attachment 14-1 - Fire Extinguisher Placement Guidelines

URS SAFETY MANAGEMENT STANDARD

Hand Tools and Portable Equipment

1. Applicability

This procedure applies to URS operations involving the use of hand tools and/or power equipment, including chain saws, brush cutters, powder-actuated tools, and similar high-hazard implements.

2. Purpose and Scope

The purpose of this standard is to provide guidelines for the safe use and handling of hand tools and power equipment.

3. Implementation

Office/Facility Locations - Implementation of this program is the responsibility of the Office Manager.

Field Locations - Implementation of this program is the responsibility of the Project Manager.

4. Requirements

A. General

1. Keep hand and power tools in good repair and used only for the task for which they were designed.
2. Remove damaged or defective tools from service.
3. Keep surfaces and handles clean and free of excess oil to prevent slipping.
4. Do not carry sharp tools in pockets.
5. Clean tools and return to the toolbox or storage area upon completion of a job.
6. Wrenches must have a good bite before pressure is applied.
 - a. Brace yourself by placing your body in the proper position so that in case the tool slips you will not fall.
 - b. Make sure hands and fingers have sufficient clearance in the event the tool slips.

URS SAFETY MANAGEMENT STANDARD

Hand Tools and Portable Equipment

- c. Always pull on a wrench, never push.
- 7. When working with tools overhead, place tools in a holding receptacle or secure when not in use.
- 8. Do not throw tools from place to place, from person to person, or drop from heights.
- 9. Use non-sparking tools in atmospheres with fire or explosive characteristics.
- 10. Inspect all tools prior to start-up or use to identify any defects.
- 11. Powered hand tools should not be capable of being locked in the on position.
- 12. Require that all power fastening devices be equipped with a safety interlock capable of activation only when in contact with the work surface.
- 13. Do not allow loose clothing, long hair, loose jewelry, rings and chains to be worn while working with power tools.
- 14. Do not use cheater pipes.
- 15. Make provisions to prevent machines from automatically restarting upon restoration of power.

B. Grinding Tools

- 1. Inspect work rests and tongue guards for grinders.
 - a. Work rest gaps should not exceed 1/8 inch (3 mm).
 - b. Tongue guards gap should not exceed 1/4 inch (6 mm).
- 2. Do not adjust work or tool rests while the grinding wheel is moving.
- 3. Inspect the grinding wheel for cracks, chips or defects. Remove from service if any defects are found.
- 4. Wear goggles when grinding. A clear full face shield may be worn with the goggles.

URS SAFETY MANAGEMENT STANDARD

Hand Tools and Portable Equipment

5. Do not use the side of a grinding wheel unless the wheel is designed for side grinding.
6. Always stand to the side of the blade, never directly behind it.
7. Use grinding wheels only at their rated speed.
8. Grinding aluminum is prohibited.
9. For U.K. operations:
 - a. No grinding wheels exceeding 55mm are to be used.
 - b. All wheels are to be marked with their safe maximum speed.
 - c. Abrasive wheels will only be operated by personnel who have been specifically trained and specified competent by URS.
 - d. Abrasive wheels will only be operated by persons specified as competent, under the 'Abrasive Wheels' Regulations.
 - e. Abrasive wheels must only be operated if the manufacturer's guard is fitted and they are in good working order.

C. Power Saws

1. Require that circular saws are fitted with blade guards.
2. Remove damaged, bent or cracked saw blades from service immediately.
3. Require that table saws are fitted with blade guards and a splitter to prevent the work from squeezing the blade and kicking back on the operator.
4. Require guards that cover the blade to the depth of the teeth on hand held circular saws. The guard should freely return to the fully closed position when withdrawn from the work surface.

URS SAFETY MANAGEMENT STANDARD

Hand Tools and Portable Equipment

D. Wood Working Machinery

1. Do not use compressed air to remove dust, chips and from wood working machinery.
2. Locate the on-off switch to prevent accidental start up. The operator must be able to shut off the machine without leaving the work station.
3. Guard planers and joiners to prevent contact with the blades.
4. Use a push stick when:
 - a. The cutting operation requires the hands of the operator to come close to the blade.
 - b. Small pieces are being machined.
5. Adjust saw blades so they only clear the top of the cut.
6. Automatic feed devices should be used whenever feasible.

E. Pneumatic Tools and Equipment

1. Require that pneumatic tools have:
 - a. Tool retainers to prevent the tool from being ejected from the barrel during use.
 - b. Safety clip or tie wire to secure connections between tool/hose/compressor if they are of the quick connection (Chicago fittings) type.
2. Do not lay hose in walkways, on ladder or in any manner that presents a tripping hazard.
3. Never use compressed air to blow dirt from hands, face or clothing.
4. Compressed air exhausted through a chip guarded nozzle shall be reduced to less than 30 psi. Proper respiratory, hand, eye and ear protection must be worn.
5. Never raise or lower a tool by the air hose.

URS SAFETY MANAGEMENT STANDARD

Hand Tools and Portable Equipment

F. Powder Actuated Fastener Tools

1. Use powder actuated tools that comply with the requirements of the American National Standards Institute (ANSI) standard A 10.3 - 1970.
2. Use only individuals that have been trained by a manufacturer's representative and possess the proper license to operate, repair, service and handle powder actuated tools.
3. Never use a powder actuated tool in a flammable or explosive atmosphere.
4. Require the use of goggles or a full face shield as well as safety glasses during operation of powder actuated tools.
5. Powder actuated tool must not be able to be fired unless the tool is pressed against the work surface.
6. The tool must not be able to fire if the tool is dropped when loaded.
7. Firing the tool should require two separate operations, with the firing movement being separate from the motion of bringing the tool to the firing position.
8. Never fire into soft substrate where there is potential for the fastener to penetrate and pass through, creating a flying projectile hazard.
9. Do not use powder actuated tools in reinforced concrete if there is the possibility of striking the re-bar.
10. Do not use on cast iron, glazed tile, surface hardened steel, glass block, live rock or face brick.
11. Never load and leave a powder actuated tool unattended. It should only be loaded prior to intended firing.
12. Test tools each day prior to loading by testing safety devices according to manufacturer's recommended procedure.

G. Chain Saws

URS SAFETY MANAGEMENT STANDARD

Hand Tools and Portable Equipment

1. Inspect the saw prior to each use and periodically during daily use.
2. Operate the chain saw with both hands at all times.
3. Never cut above chest height.
4. Require that the idle is correctly adjusted on the chain saw. The chain should not move when the saw is in the idle mode.
5. Start cutting only after a clear escape path has been made.
6. Shut the saw off when carrying through brush or on slippery surfaces. The saw may be carried no more than 50 feet (15 meters) while idling.
7. Require applicable protective gear. This may include, but is not limited to:
 - a. Loggers safety hat.
 - b. Safety glasses.
 - c. Steel-toed boots.
 - d. Protective leggings.
 - e. Hearing protection.
8. Inspect saws to require that they are fitted with an inertia break and hand guard.
9. Never operate a chain saw when fatigued.
10. Do not allow others in the area when chain saws are operated.
11. Make sure there are no nails, wire or other imbedded material that can cause flying particles.
12. Do not operate a chain saw that is damaged, improperly adjusted, or is not completely and securely assembled. Always keep the teeth sharp and the chain tight. Worn chains should immediately be replaced.

URS SAFETY MANAGEMENT STANDARD

Hand Tools and Portable Equipment

13. Keep all parts of your body away from the saw chain when engine is running.

14. For U.K. operations, only personnel specifically trained and certified as competent by URS can operate chain saws.

H. Hand Operated Pressure Equipment

1. Pressure equipment such as grease guns, paint and garden sprayers shall be directed away from the body and other personnel in the area. The person operating any equipment such as this, which has a potential for eye injury, must wear protective goggles.
2. The noise produced when using certain types of pressure equipment may require the use of hearing protection.
3. Never allow the nozzle of a pressurized tool to come in contact with any body parts while operating. There is potential for injection of a chemical directly into the user's body, resulting in severe injury or death.

I. Gasoline Powered Tools

1. Never pour gasoline on hot surfaces.
2. Never fuel around open flame or while smoking.
3. Shut down the engine before fueling.
4. Provide adequate ventilation when using in enclosed spaces.
5. Use only OSHA approved safety cans to transport flammable liquids.

J. Inspection

Inspect all hand tools on a regular basis. Defective tools shall be immediately removed from service, tagged or destroyed to prevent further use.

5. Documentation Summary

Place in the Project Safety File:

URS SAFETY MANAGEMENT STANDARD

Hand Tools and Portable Equipment

- A. Site briefings regarding tool use.
- B. Records of tools removed from service.
- C. Copies of powder actuated tool licenses (as applicable).
- D. Tool inspection documentation.

6. Resources

- A. U.S. OSHA Standard - Hand and Portable Power Tools -
29 CFR 1910, Subpart P
- B. U.S. OSHA Standard - Construction Tools - Hand and Power -
29 CFR 1926, Subpart I
- C. ANSI A10.3 – 1970
- D. National Association of Demolition Contractors
(<http://www.demolitionassociation.com/>)
- E. U.K. - 'Abrasive Wheel' Regulations
- F. U.K. - 'Wood-Working Machine' Regulations
- G. U.K. - 'Provision and Use of Work Equipment' Regulations
- H. Australian Standards Collection 26 - Occupational Health & Safety -
Powered Machining and Tools

URS SAFETY MANAGEMENT STANDARD

Heat Stress

//

1. Applicability

This procedure applies to URS field projects where ambient (not adjusted) temperatures exceed 70°F (21°C) for personnel wearing chemical protective clothing, including Tyvek coveralls, and 90°F (32°C) for personnel wearing normal work clothes.

2. Purpose and Scope

The purpose of this procedure is to protect project personnel from the effects of heat related illnesses.

3. Implementation

Field Activities - Implementation of this procedure is the responsibility of the Project Manager.

4. Requirements

A. Monitor ambient temperatures and conduct Heat Stress Monitoring when threshold temperatures (see Section 1) are reached.

B. Conduct initial monitoring to determine first rest break.

1. Measure the air temperature with a standard thermometer with the bulb shielded from radiant heat; this yields T (actual).
2. Estimate the fraction of sunshine by judging what percent time the sun is not shielded by clouds that are thick enough to produce a shadow. 100 percent sunshine - no cloud cover = 1.0; 50 percent sunshine - 50 percent cloud cover = 0.5; 0 percent sunshine - full cloud cover = 0.0.
3. Plug these variables into the following equation to determine the adjusted temperature:
$$T \text{ (adjusted)} = T \text{ (actual)} + (13 \times \text{fraction sunshine})$$
4. Use Attachment 18-1 to determine the length of the first work shift. At the first break, initiate the heart rate monitoring or body temperature monitoring as described below.

C. Body Temperature Monitoring

URS SAFETY MANAGEMENT STANDARD

Heat Stress

1. Monitor oral body temperature to determine if employees are adequately dissipating heat buildup. Ear probe thermometers which are adjusted to oral temperature are convenient and the preferred method of measurement. Determine work/rest regimen as follows:
 - a. Measure (oral adjusted) temperature at the end of the work period.
 - b. If temperature exceeds 99.6 °F (37.5°C), shorten the following work period by 1/3 without changing the rest period.
 - c. If temperature still exceeds 99.6 °F (37.5°C), shorten the following work period by 1/3.
 - d. Do not allow a worker to wear impermeable PPE when his/her oral temperature exceeds 100.6 °F (38.1°C).
 2. Oral temperatures are to be obtained prior to the employee drinking water or other fluids.
- D. Record monitoring results on Heat Stress Monitoring Form (Attachment 18-2).
 - E. Investigate the use of auxiliary cooling devices in extreme heat conditions.
 - F. Conduct briefings for employees regarding health hazards and control measures associated with heat stress whenever conditions require the implementation of heat stress monitoring. Review the information provided in Attachment 18-3.
 - G. Provide water and electrolyte replacement drinks fluids as described in Attachment 18-3.
 - H. Allow employees who are not accustomed to working in hot environments appropriate time for acclimatization (see Attachment 18-3).
 - I. Provide break areas as described in Attachment 18-3.
5. Documentation Summary
- File these records in the Project Safety File.

URS SAFETY MANAGEMENT STANDARD
Heat Stress

- A. Heat Stress Monitoring Forms.
- B. Employee Safety Briefing Verification Forms.

6. Resources

- A. NIOSH - "Working in Hot Environments"
- B. AFL-CIO Building Trades Division - "Heat Stress in Construction"
- C. Attachment 18-1 - Initial Work Monitoring Cycles
- D. Attachment 18-2 - Heat Stress Monitoring Record
- E. Attachment 18-3 - Informational Supplement



Health and Safety Program

Attachment 18-1

**INITIAL WORK /
MONITORING CYCLES**

Adjusted Temperature	Normal Work Clothes	Protective Clothing
90°F (32.2°C) or above	After each 45 minutes of work	After each 15 minutes of work
87.5°F - 90°F (30.8° - 32.2°C)	After each 60 minutes of work	After each 30 minutes of work
82.5°F - 87.5°F (28.1°C - 30.8°C)	After each 90 minutes of work	After each 60 minutes of work
77.5°F - 82.5°F (25.3°C - 28.1°C)	After each 120 minutes of work	After each 90 minutes of work
72.5°F - 77.5°F (22.5°C - 25.3°C)	After each 150 minutes of work	After each 120 minutes of work

URS Corporation**URS Corporation Health & Safety Program
EMPLOYEE HEAT STRESS EXPOSURE MONITORING RECORD**

DATE: _____ SAFETY REPRESENTATIVE: _____

WORKER'S NAME: _____ SUBCONTRACTOR: _____

WORK ACTIVITY: _____

<i>Time (24 hour)</i>	<i>Oral Temp (°F)</i>	<i>Pulse (BPM)</i>	<i>Comments</i>

DATE: _____ SAFETY REPRESENTATIVE: _____

WORKER'S NAME: _____ SUBCONTRACTOR: _____

WORK ACTIVITY: _____

<i>Time (24 hour)</i>	<i>Oral Temp (°F)</i>	<i>Pulse (BPM)</i>	<i>Comments</i>

DATE: _____ SAFETY REPRESENTATIVE: _____

WORKER'S NAME: _____ SUBCONTRACTOR: _____

WORK ACTIVITY: _____

<i>Time (24 hour)</i>	<i>Oral Temp (°F)</i>	<i>Pulse (BPM)</i>	<i>Comments</i>

HEAT RASH

Heat rash (prickly heat) may result from continuous exposure to heat or humid air. It appears as red papules (elevated skin lesion), usually in areas where the clothing is restrictive, and gives rise to a prickly sensation, particularly as sweating increases. It occurs in skin that is persistently wetted by unevaporated sweat. The papules may become infected unless treated.

First Aid for Heat Rash - to prevent heat rash: shower after work, dry off thoroughly, and put on clean, dry underwear and clothes. Try to stay in a cool place after work. If, in spite of this, you develop heat rash, see your physician.

HEAT CRAMPS

Heat cramps are caused by heavy sweating with inadequate electrolyte replacement. Signs and symptoms include:

- Muscle spasms.
- Pain in the hands, feet and abdomen.

First Aid for Heat Cramps - leave the work area, and rest in a cool, shaded place. Drink one or two glasses of electrolyte replacement drink, and try to gently massage the cramped muscle. Once the spasms disappear, you may return to work; taking adequate breaks and drinking electrolyte replacement drink should prevent the cramps from returning.

HEAT EXHAUSTION

Heat exhaustion occurs from increased stress on various body organs including inadequate blood circulation due to cardiovascular insufficiency or dehydration. Signs and symptoms include:

- Pale, cool, moist skin.
- Heavy sweating.
- Dizziness.
- Nausea.
- Fainting.

The key here is that the victim is still sweating, so the cooling system is still working; it's just under severe stress. The body core temperature may be elevated. It is important to

recognize and treat these symptoms as soon as possible, as the transition from heat exhaustion to the very hazardous heat stroke can be quite rapid.

First Aid for Heat Exhaustion - leave the work area immediately, go through decon and remove all chemical protective clothing. Rest in a cool, shaded place and open your clothing to allow air circulation; lay flat except when taking fluids. Drink plenty of cooled electrolyte replacement drinks. Your work is over for the day; do not attempt to return. Medical assistance in severe cases may be warranted.

HEAT STROKE

Heat stroke is the most serious form of heat stress. Temperature regulation fails and the body temperature rises to critical levels. Immediate action must be taken to cool the body before serious injury and death occurs. Competent medical help must be obtained. Signs and symptoms are:

- Red, hot, usually dry skin.
- Lack of or reduced perspiration (lack of perspiration may be masked for those wearing chemical protective clothing since perspiration from earlier in the day will be present).
- Nausea.
- Dizziness and confusion.
- Strong, rapid pulse.
- Coma.

First Aid for Heat Stroke - THIS IS A MEDICAL EMERGENCY! SUMMON MEDICAL ASSISTANCE IMMEDIATELY! Remove the victim from the work area, perform a gross decon, and remove all PPE. Have the victim lie down in a cool, shady area. Attempt to bring the victim's temperature down by increasing air movement (electric fan) or placing wetted sheets or towels on them. Place an ice bag on the victim's head. The victim must not be sent home or left unattended without a physician's specific order.

HEAT STRESS PREVENTION

The best approach to avoiding heat-related illnesses is through preventative heat stress management. The site manager and site safety officer are responsible for implementing this program.

Rest areas - a relatively cool, shaded area must be provided for breaks when ambient temperatures exceed 70° F and workers are wearing chemical protective clothing (including uncoated Tyvek), or if temperatures exceed 90° F and workers are wearing "Level D"

coveralls or work clothes. A car or van is an oven, not a rest area. For Hazardous Waste Sites, the rest area should be located in the support zone adjacent to the contamination reduction zone, situated so that part of it is in the decon area so workers can take breaks without going through full decon. If shade is not available, build some: use a plastic "dining canopy", which can be obtained at sporting goods stores. This same type of canopy can be set up to shade personnel performing various types of work in hot weather.

Liquids - encourage employees to drink plenty of cool plain water and electrolyte replacement drinks. Supplementing water with cool electrolyte replacement drinks, such as Gatorade, Squench or Quik-kick (drink) is helpful to employees who tend to sweat a lot. Do not use "community cups"; use paper cups. Have workers drink 16 ounces of drink before beginning work, such as in the morning and after lunch. At each break, workers should take 8-16 ounces of drink. Don't wait until you are thirsty to drink.

Discourage the use of alcohol during non-working hours, and discourage the intake of coffee during work hours, as these make heat stress control more difficult.

Acclimatization - this is the process by which your body "gets used to" hot work environments. This is achieved by slowly increasing workloads. Start at 50 percent capacity on day one, and increase by 10 percent per day; on day six, you'll be at 100 percent. You don't lose acclimatization over a weekend, but it'll start to decrease after three to four days. If you don't do hot work for a week, it is gone. You don't have to do full shift hot work to achieve or retain acclimatization; a minimum of 100 minutes of continuous hot work exposure per day is adequate.

Auxiliary Cooling - auxiliary cooling is usually obtained by providing workers with a specially-designed vest, which is worn under the protective clothing, but over any underclothing. These vests typically provide cooling via one of two methods: the use of ice or other frozen media, or the use of a vortex cooler. Each method has its advantages and disadvantages.

The frozen media vest requires a means for freezing the media, and the media (usually water or "blue ice") will melt, requiring replacement.

The vortex cooler tends to cool more uniformly. Instead of frozen media, this vest uses the expansion of compressed air to cool the wearer. The drawback is the compressed air requirement, but this is negated when the wearer is already using an airline respirator supplied by a compressor. A vortex cooler should not be supplied from air cylinders, as this will draw down the cylinders rapidly.

Auxiliary cooling should be considered when the following conditions exist:

- Ambient temperature over 80° F
- Workers wearing impermeable garments (PE Tyvek, Saranex, Chemrel, etc.)
- It is desirable to have long work shifts with minimum interruption

URS SAFETY MANAGEMENT STANDARD

Heavy Equipment Operations

1. Applicability

This procedure applies to URS field projects where heavy equipment is in operation.

2. Purpose and Scope

The purpose of this procedure is to require that heavy equipment is operated in a safe manner, that the equipment is properly maintained and that ground personnel are protected.

3. Implementation

Field Activities - Implementation of this procedure is the responsibility of the Project Manager.

4. Requirements

A. Authorized Operators

1. Evaluate operators through documentable experience (resume) and a practical evaluation of skills.
2. Allow only qualified operators to operate equipment.
3. Prohibit equipment from being operated by any personnel who have not been specifically authorized to operate it.
4. Maintain a list of operators for the project and the specific equipment that they are authorized to operate.
5. Require operators to use seat belts at all times in all equipment and trucks.
6. Brief operators on the following rules of operation:
 - a. Operators are in control of their work area.
 - b. Equipment will be operated in a safe manner and within the constraints of the manufacturer's Operation Manual.
 - c. Operators will stop work whenever unauthorized ground personnel or equipment enter their work area and only resume work when the area has been cleared.

URS SAFETY MANAGEMENT STANDARD

Heavy Equipment Operations

B. Ground Personnel

1. Require that ground personnel on the site have received training and comply with the following rules of engagement:
 - a. All ground personnel must wear orange protective vests when in work areas with any operating equipment.
 - b. Ground personnel will stay outside of the swing zone or work area of any operating equipment.
 - c. Ground personnel may only enter the swing or work area of any operating equipment when:
 1. They have attracted the operator's attention and made eye contact.
 2. The operator has idled the equipment down and grounded all extensions.
 3. The operator gives the ground personnel permission to approach.
 - d. Ground personnel shall never walk or position themselves between any fixed object and running equipment or between two running pieces of equipment.

C. Equipment

1. Maintain operations manuals at the site for each piece of equipment that is present on the site and in use.
2. Require that operators are familiar with the manual for the equipment and operate the equipment within the parameters of the manual.
3. Require that all equipment is provided with roll-over protection systems (ROPS). Tracked excavators are exempt from ROPS requirements but must have a cab which provides protection from overhead hazards
4. Verify that seatbelts are present and functional in all equipment.

URS SAFETY MANAGEMENT STANDARD

Heavy Equipment Operations

5. Prohibit the use of equipment which has cab glass which is cracked, broken or missing.
6. Require that backup alarms are functional on all trucks and equipment. Tracked excavators must have bidirectional alarms or the operator must be provided with a spotter whenever tracking in either direction.
7. Require all extensions such as buckets, blades, forks, etc. to be grounded when not in use.
8. Require brakes to be set and wheels chocked (when applicable) when not in use.

D. Inspection and Maintenance

1. Require daily inspections of equipment by operators using Attachment 19-1.
2. Prohibit use of equipment deemed to be unsafe as a result of daily inspection until required repairs or maintenance occur.
3. Conduct maintenance as prescribed by the manufacturer in the Operations Manuals for each piece of equipment.
4. During maintenance/repair, require that:
 - a. Motors are turned off.
 - b. All extensions are grounded or securely blocked.
 - c. Controls are in a neutral position.
 - d. Brakes are set.

5. Documentation Summary

File the following documents in the Project Health and Safety File.

- A. List of authorized operators.
- B. Operator qualifications.
- C. Daily Equipment Inspection Logs.

URS SAFETY MANAGEMENT STANDARD

Heavy Equipment Operations

- D. Site Briefing documentation for operator rules and ground personnel "rules of engagement".

6. Resources

- A. U.S. OSHA Standard - Motorized Vehicles and Mechanized Equipment - 29 CFR 1926, Subpart O
- B. National Association of Demolition Contractors – Safety Manual (<http://www.demolitionassociation.com/>)
- C. Queensland Workplace Health and Safety - Competency Standard for Users & Operators of Industrial Equipment
- D. Attachment 19-1 - Equipment Inspection Form



Health and Safety Program
**DAILY HEAVY EQUIPMENT
SAFETY INSPECTION CHECKLIST**

Attachment 19-1

Equipment Id No. _____ Inspector's Name _____

Equipment Name _____ Employee No. _____

Beg. Hours _____ End Hours _____ Date _____

INSTRUCTIONS: Each shift shall inspect all applicable items indicated. If an unsatisfactory condition is observed, suspend operation of the equipment and report the unsatisfactory condition to the site supervisor immediately.

ITEM INSPECTED	CHECK IF SATISFACTORY	COMMENTS
Falling Object Protective Structure (FOP)		
Roll-Over Protection Structure (ROP)		
Seat Belts		
Operator Seat Bar(s)		
Side Shields, Screens or Cab		
Lift Arm Device		
Grab Handles		
Back-up Alarm – Working		
Lights		
Guards		
Horn		
Anti-Skid Tread Clear of Mud		
Safety Signs (i.e., counterbalance swing area)		
Fire Extinguisher		
General Condition		
Fuel Connection		
Oil (fuel and no leaks)		
Clear of Extra Materials		
Controls Function Properly		
Damaged Parts		
Hydraulic System (full and no leaks)		
Parking Brake		
Lift Arm and Bucket		
Tires/Tracks		
Steering		
Breathing Air System		
Blast Shields		
Gallons of Fuel Added		
Quarts of Oil Added		

Operator Signature _____

URS SAFETY MANAGEMENT STANDARD **Housekeeping**

1. Applicability

This procedure applies to URS facilities and field operations.

2. Purpose and Scope

Proper housekeeping in office locations, on construction sites, and fixed work facilities is essential to prevent fires as well as injuries resulting from slips, trips and falls.

3. Implementation

Office Locations - Implementation of this program is the responsibility of the Office Manager.

Field Activities - Implementation of this program is the responsibility of the Project Manager.

4. Requirements

A. Maintain the cleanliness of the site.

1. Require tools and equipment to be stowed at the end of the day.
2. Store supplies in locations away from walkways and in a manner that will not trip workers.
3. Keep weeds and vegetation away from stockpiled materials and walkways.
4. Maintain flooring and walkways in a clean, dry, smooth condition.
5. Dispose of construction debris in a timely manner.

B. Regularly inspect the work area for slip and trip hazards.

1. Office locations - inspect work areas at least semi-annually. Utilize the check-sheet provided as Attachment 21-1.
2. Field sites - inspect sites at least monthly. Utilize the check- sheet provided as Attachment 21-1.

C. Thoroughly investigate all injuries resulting from slips, trips and falls on site. Correct conditions contributing to injuries.

URS SAFETY MANAGEMENT STANDARD **Housekeeping**

5. Documentation Summary

A. Office/Laboratory

File Completed Housekeeping Inspection Sheets (Attachment 21-1), in the Office Safety Filing System.

B. Field

File Completed Housekeeping Inspection Sheets (Attachment 21-1), in the Project Safety File.

6. Resources

- A. U.S. OSHA Standard - Sanitation - 29 CFR 1910.141
- B. U.S. OSHA Standard - Aisles and Passageways - 29 CFR 1910.22.
- C. U.K. - 'The Workplace' (Health & Safety and Welfare) Regulations
- D. U.K. - 'The Construction' (Health and Welfare) Regulations
- E. Attachment 21-1 - Housekeeping Inspection Sheet



Health and Safety Program
HOUSEKEEPING INSPECTION SHEET

Attachment 21-1

Building or Location: _____

Inspection Conducted by: _____ Date: _____

		Yes	No must be completed	N/A
General Site Housekeeping				
1.	No blocking of exits or emergency equipment.			
2.	Equipment or materials are not left lying on the ground.			
3.	Storage areas are free from the accumulation of materials that constitute trip hazards.			
4.	Scrap materials and other debris is kept free from work area.			
5.	Combustible scrap and debris is removed by safe means at regular intervals.			
6.	Oily rags are stored in metal cans with tight fitting lids. Oily rags are removed at the end of the day.			
Visibility				
7.	Halls, stairways and walkways are well lit.			
8.	Well designed light switches are present in areas where walkways are not always lighted.			
9.	Dust, smoke or steam does not create poor visibility.			
10.	Glare from floodlights or windows does not create poor visibility in work areas.			
Stairs				
11.	Handrails are tight and at the proper level.			
12.	Handrails extend past the top and bottom step.			
13.	White or yellow strips are painted on the first and last step for better visibility. (Not an OSHA requirement – recommendation only).			
14.	Steps are not rough or defective.			
15.	Stair treads are wide enough and risers consistently spaced.			
16.	Stairs are free of obstructions.			
Floor Conditions				
17.	Floors of every workroom are clean, and so far as possible, in a dry condition.			
18.	Floors are not oily or overly waxed or polished.			
19.	Where wet floors or processes are present, proper drainage is provided and false floors, mats, or other dry standing places are provided.			
20.	Floor surfaces are finished with non-slip coatings where spills are likely.			
21.	Floors and passageways are free from protruding nails, splinters, holes, or loose boards.			



Health and Safety Program
HOUSEKEEPING INSPECTION SHEET

Attachment 21-1

		Yes	No must be completed	N/A
22.	Floors are free of holes and depressions.			
23.	Aisles or pathways are wide enough for easy passage and for carrying objects (48 inches is recommended).			
24.	Ramps are covered with non-slip surfaces or matting.			
25.	Carpets or rugs do not have loose or frayed edges that may catch boots or shoes.			
26.	Walkways are free from extension cords, air hoses and cables.			
27.	Boxes, containers, machine parts or other tripping hazards do not lie in pathways.			
Ground Conditions				
28.	Trip hazards are not present.			
29.	Fall hazards are not present.			
30.	Holes or changes in ground elevation are either filled or guarded.			
31.	Muddy walkways are filled with gravel to reduce slipping.			
32.	All employees who work in wet or greasy conditions wear slip resistant footwear.			
Equipment				
33.	Vehicle steps are of adequate size, surface placement for safe dismounting.			
34.	Hand grips or ladders are adequate for getting in and out of equipment.			
35.	Ladders have been checked for damage and removed from service if found unsafe.			

I certify that the above inspection was performed to the best of my knowledge and ability, based on the conditions present on _____

Signature

URS SAFETY MANAGEMENT STANDARD

Lockout and Tagout Safety

1. Applicability

This procedure applies to URS projects involving exposure to uncontrolled sources of energy.

2. Purpose and Scope

This procedure outlines the requirements that must be followed to prevent injuries, either direct or indirect, when work is performed near or on an energy source that is unexpectedly operated.

Some energy sources that should be protected against include:

- A. Electrical circuits.
- B. Fluid systems (water and liquid product).
- C. Pneumatic systems.
- D. Flammable systems (including liquid and gaseous fuels).
- E. Thermal systems (steam).
- F. Gravity systems.
- G. Hazardous material systems.

3. Implementation

Field Operations - Implementation of this Procedure is the responsibility of the Project Manager

4. Requirements

A. General

1. "Authorized employee" means a person who locks/tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment, and who has received the training described in Section C, below.
2. "Affected employee" means an employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout and

URS SAFETY MANAGEMENT STANDARD

Lockout and Tagout Safety

tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

3. "Qualified person" means person who is familiar with the construction and operation of the equipment and the hazards involved, and who:
 - a. Requests de-energizing of an energy source.
 - b. Inspects de-energizing with the authorized employee.
 - c. Assures that authorized employee has locked and tagged the source.
 - d. Requires that all applicable authorized employees affix lock/tags at the same locations(s).
 - e. Operates the equipment controls or otherwise verifies that the equipment cannot be restarted after being locked out.
 - f. Coordinates the continuation of lock/tagout protection through shift or personnel changes.
 - g. Controls accountability of locks and tags.
 - h. Makes appropriate log entries on Attachment 23-1.
 - i. Conducts tests and visual inspections prior to reenergizing to check that circuits and equipment can be safely energized.
4. Employees shall not work on or in equipment, vessels, etc., which are not in a "zero energy state".
5. Coordinate all lockout and energy control activities with client, owner, contractor, and subcontractor practices and programs.
6. Require that all locks are keyed differently and that only one key exists for each lock and remains in the possession of the authorized employee to whom it has been assigned.

B. Procedure

Follow this lock and tagout procedure whenever the unexpected operation of equipment, switch, or valve or other energy sources could injure

URS SAFETY MANAGEMENT STANDARD

Lockout and Tagout Safety

someone. Only authorized employees may perform jobs requiring lockout procedures.

1. Step 1 - Achieving Zero Energy

- a. Identify and locate all sources of energy that could affect individuals involved.
- b. Notify all affected personnel that equipment is going to be de-energized and accessed. This can be done verbally, visually, or by hanging a warning tag on the control panel.
- c. Disconnect the main sources of power by breaking the primary power circuit, valve, pipe, etc. Locking out a low voltage control circuit is not considered breaking a main power source.
- d. Disconnect each separate power source of multiple power systems, e.g., air over hydraulic, electric over hydraulic, etc.
- e. Release all residual energy remaining behind the power source, e.g., hydraulic or air pressure, etc.
- f. Secure all power sources in the de-energized position with a lockout device. Use multiple lock devices when more than one lock is required. Each person who is protected by the lockout:
 1. Places a signed lock and tag on source location(s).
 2. Keeps the key to his/her own lock.
 3. Removes own lock (only exception: person not on site and person is contacted).
 4. Works only on protected source(s).
 5. Removes lock at completion for work shift or transfer.
- g. Block or blank any machinery, device, or piping system that can move on its own or deliver energy with or without the power source.
- h. Test equipment, prior to working on it, to insure that all sources of energy have been isolated and that it is "safe".

URS SAFETY MANAGEMENT STANDARD

Lockout and Tagout Safety

2. Step 2 - Preparing to Re-Energize

- a. Once the task has been completed, tools picked up, safety chains, guards, guard rails, warning signs, etc. are replaced, notify affected personnel that the lockout device is going to be removed.
- b. Remove locks and tags.
- c. Once all lockout devices have been removed, the equipment or process may be restarted.

3. Temporary operation of locked out source

- a. Make sure everyone is clear of the system.
- b. Make sure tools are clear.
- c. Remove lock(s).
- d. Energize the system and conduct check.
- e. Immediately de-energize the system and replace locks.

4. Unauthorized removal of lock and tag is prohibited. Use the following procedure for Supervisor or Qualified Person to remove lock/tag when employee is not available:

- a. Verify authorized employee is not on site and available to remove own tag.
- b. Check that employees are not exposed to hazards.
- c. Verify equipment is safe to operate, tools have been removed and guards have been replaced.
- d. Remain with affected equipment so that no one returns while equipment or process is being restarted.
- e. Remove lock/tag and energize equipment.
- f. Require that affected employee knows the lockout device(s) has been removed before he/she resumes work.

C. Training

URS SAFETY MANAGEMENT STANDARD

Lockout and Tagout Safety

1. Authorized employees must receive training prior to conducting lockout/tagout activities.
2. Training must include:
 - a. Purpose of lockout procedure.
 - b. Hazards associated with different energy sources.
 - c. Recognition of when to lockout.
 - d. Electrical lockout procedures.
 - e. Valve lockout procedures.
 - f. Compliance with lockout procedures.
 - g. Discussion of specific procedures.

5. Documentation Summary

File these records in the Project Safety File:

- A. Training records for authorized employees
- B. Lockout Log

6. Resources

- A. ANSI 235.2
- B. U.S. JSHA Standard - Accident Prevention Tags and Signs - 29 CFR 1926.200
- C. U.S. OSHA Standard - Lockout and Tagging of Circuits - 29 CFR 1926.417
- D. U.S. OSHA Technical Links - Lockout/Tagout
- E. U.K. - 'Management of Health and Safety Work' Regulations
- F. Attachment 23-1 - Lock and Tag Log



Health and Safety Program
LOCK AND TAG LOG

Attachment 23-1

Job Name: _____ Job Location: _____

Name of Tagging Authority: _____ Date: _____

Date	Lockout Location	Authorized Employee	Activity Initiated	Activity Completed

URS SAFETY MANAGEMENT STANDARD

Noise and Hearing Conservation

1. Applicability

This procedure applies to URS Corporation facilities and field operations where URS Corporation personnel may encounter noise exposures that may exceed 85 dBA as an 8 hour Time Weighted Average.

2. Purpose and Scope

The purpose of this procedure is to protect employees from hazardous noise exposures and to prevent hearing loss.

3. Implementation

Office/Lab locations: High noise is unlikely to be encountered at URS offices, however, if applicable, the implementation of this program is the responsibility of the Office Manager.

Field Activities: Implementation of this program is the responsibility of the Project Manager.

4. Requirements

A. General

The use of hearing protectors in any location where powered or motorized equipment or any other noise source could reasonably be expected to exceed 85 dBA. Use of hearing protectors may only be discontinued when noise levels are verified to be less than 85 dBA through a properly conducted noise survey. Whenever information indicates that any employee's exposure may equal or exceed an 8-hour time-weighted average of 85 decibels, the project manager or location manager will be responsible to enforce the proper use of hearing protectors.

B. Hearing Protectors

1. Require that at least two (2) types of hearing protectors are available to employees free of charge, preferably a plug and a muff type.
2. Minimum Noise Reduction Ratings (NRR)

Hearing protectors issued must have the following minimum NRR:

Ear Plug	Muffs
29 dBA	27 dBA

URS SAFETY MANAGEMENT STANDARD

Noise and Hearing Conservation

3. Require that hearing protectors are used and thus effectively protect hearing.

C. Noise Surveys

1. Noise surveys must be conducted in a manner that reasonably reflects the exposure of the affected employees. Surveys must be conducted under the supervision of a URS Safety Program Representative.
2. Sound level meters and audio dosimeters used to determine employee exposure to noise sources must be Type II (accurate to within +/- 2 dBA), operated in "slow" response, on the "A" scale, and be calibrated to factory guidelines (including periodic factory recalibration).

D. Noise Controls

Eliminate noise sources to the extent possible. Examples of controls that must be considered follow:

1. Addition or replacement of mufflers on motorized equipment.
2. Addition of mufflers to air exhausts on pneumatic equipment.
3. Following equipment maintenance procedures to lubricate dry bearings.
4. Isolation of loud equipment with newer and quieter models.

E. Audiometric Exams

1. Tests

Details on the medical surveillance program (including audiometric testing) are included in SMS 24.

Audiometric tests shall be performed by a person meeting OSHA's 1910.95 (g)(3)'s definition. Within 6 months of an employee's first exposure at or above the action level, a valid baseline audiogram shall be established against which subsequent audiograms can be compared. Testing to establish a baseline audiogram shall be preceded by 14 hours without exposure to noise. Hearing protectors may be used as a substitute for the requirement that

URS SAFETY MANAGEMENT STANDARD

Noise and Hearing Conservation

baseline audiogram shall be preceded by 14 hours without exposure to workplace noise. The medical surveillance provider shall notify employees of the need to avoid high levels of non-occupational noise exposure during the 14-hour period immediately preceding the audiometric examination. For multi-year projects, an annual audiogram shall be obtained for each employee exposed at or above an 8-hour time-weighted average of 85 decibels.

Each employee's annual audiogram shall be compared to that employee's baseline audiogram to determine if the audiogram is valid and if there is a standard threshold shift (STS). If the annual audiogram shows that an employee has suffered a standard threshold shift, the employer will obtain a retest within 30 days and consider the results in assessing an STS as the annual audiogram. The audiologist, otolaryngologist, or physician shall review problem audiograms and shall determine whether there is a need for further evaluation. If an STS has occurred, the medical surveillance provider will notify the employee within 21 days of the determination.

2. Standard Threshold Shifts

If an employee's test results show a confirmed STS, their hearing protection will be evaluated and refitted, and a medical evaluation may be required.

F. Training

Verify that each employee who must work in a noisy environment is current on the required Hearing Conservation Training. Training must include the following topics:

1. The effects of noise on hearing.
2. The purpose of hearing protectors.
3. The advantages and disadvantages of various types of hearing protectors.
4. The attenuation of various types of hearing protection.
5. The selection, fitting, care, and use of hearing protectors.
6. The purpose of audiometric testing.

URS SAFETY MANAGEMENT STANDARD

Noise and Hearing Conservation

7. An explanation of the audiometric testing procedure.

5. Documentation Summary

- A. File these records in the Office Safety Filing System:

1. Noise surveys, when applicable.
2. Training Records.

- B. File noise surveys, when applicable, in the Project Safety File:

6. Resources

- A. U.S. OSHA Standard – Occupational noise exposure – 29 CFR 1910.95
- B. U.S. OSHA Construction Standard – Occupational noise exposure – 29 CFR 1926.52
- C. U.S. OSHA Technical Links - Noise and Hearing Conservation
- D. American Industrial Hygiene Association: The Occupational Environment – Its Evaluation and Control, Chapter 20. Fairfax, VA: 1997
- E. National Hearing Conservation Association web site
- F. URS SMS 24 Medical Screening and Surveillance

URS Safety Management Standard

Personal Protective Equipment

1. Applicability

This program applies to URS Corporation laboratory and field operations where the use of Personal Protective equipment (PPE) is warranted. Refer to SMS 42, "Respiratory Protection", for respiratory hazards. Hearing Protection issues are additionally addressed in SMS 26, "Noise and Hearing Conservation."

2. Purpose and Scope

This procedure provides information on recognizing those conditions that require personal protective equipment as well as selecting personal protective equipment for hazardous activities.

3. Implementation

Shop/Lab Locations - Implementation of this program is the responsibility of the Office Manager.

Field Activities - Implementation of this program is the responsibility of the Project Manager.

4. Requirements

A. Perform hazard assessments for those work activities that are likely to require the use of PPE.

1. Use Attachment 29-1 to perform the assessment.
2. Reevaluate completed hazard assessments when the job changes.

B. Eliminate the hazards identified in Attachment 29-1, if possible, through engineering or administrative controls.

C. Select PPE that will protect employees if hazards cannot be eliminated.

1. See Attachment 29-1 for recommended PPE.
2. Review Material Safety Data Sheets for chemicals used for PPE recommendations.
3. If needed, consult with the URS Health and Safety Representative for assistance in selecting PPE.

URS Safety Management Standard **Personal Protective Equipment**

- D. Provide required PPE to employees free of charge (excluding in some instances components of standard work attire such as steel-toed boots), assuring that it fits properly giving them a choice if more than one type is available.
- E. Whenever a hazard is recognized, and PPE is required, the employees will be provided with the appropriate PPE. However, when a PPE is not required, and the employee selects to wear his or her own PPE, the project manager shall ensure that the employee is properly trained in the fitting, donning, doffing, cleaning, and maintenance of his or her employee owned equipment.
- F. Conduct and document employee training.
 - 1. Train all employees who are required to wear PPE.
 - 2. Require that training includes:
 - a. When PPE is necessary to be worn.
 - b. What PPE is necessary.
 - c. How to properly don, doff, adjust and wear PPE.
 - d. Limitations of PPE
 - e. Proper care, maintenance, useful life and disposal of PPE.
 - 3. Training must be conducted before PPE is assigned.
 - 4. Refresher training is needed when:
 - a. New types of PPE are assigned to the worker.
 - b. Worker cannot demonstrate competency in PPE use.
 - 5. Keep written records of the employees trained and type of training provided, including the date of training.
- G. Maintain Protective Equipment
 - 1. Check personal protective equipment for damage, cracks, and wear prior to each use. Replace or repair equipment not found in good condition.

URS Safety Management Standard **Personal Protective Equipment**

2. Wash off contaminated protective equipment with water and mild soap, if necessary, to prevent degradation of the equipment.

H. Periodically inspect worksites where employees are using personal protective equipment, using Attachment 29-2.

1. Field activities – inspect work sites at least monthly.
2. Office locations – inspect work sites semi-annually.

5.0 Documentation Summary

A. Records required in the Project Safety File:

1. Completed Hazard Assessment Certification Forms (Attachment 29-1)
2. Completed Personal Protective Equipment Inspection Sheet (Attachment 29-2)
3. Documentation of employee training.

B. Records required in the Laboratory Safety Filing System:

1. Completed Hazard Assessment Certification Forms (Attachment 29-1)
2. Completed Personal Protective Equipment Inspection Sheet (Attachment 29-2)
3. Documentation of employee training.

6.0 Resources

- A. U.S. OSHA Standards - Personal Protective Equipment -29CFR 1910 Subpart I
(<http://www.osha-slc.gov/SLTC/lead/index.html>)
- B. U.S. OSHA Construction Standard - Personal Protective Equipment –29 CFR 1926 Subpart E
(http://www.osha-slc.gov/OshStd_toc/OSHA_Std_toc_1926_SUBPART_E.html)
- C. U.S. OSHA Technical Links - Personal Protective Equipment
(<http://www.osha-slc.gov/SLTC/personalprotectiveequipment/index.html>)

URS Safety Management Standard **Personal Protective Equipment**

- D. Australian Standards SAA HB9-1994 - Occupational Personal Protection
- E. American National Standards Institute, ANSI Z89.1-1986, Protective Headwear
(http://www.ansi.org/cat_top.html)
- F. American National Standards Institute, ANSI Z87.1 - 1989, Eye and Face Protection
(http://www.ansi.org/cat_top.html)
- G. American National Standards Institute, ANSI Z41.1 - 1991, Foot Protection
(http://www.ansi.org/cat_top.html)
- H. SMS 40 - Fall Protection
- I. Attachment 29-1 Hazard Assessment Form
- J. Attachment 29-2 PPE Inspection Form

URS SAFETY MANAGEMENT STANDARD

Sanitation

1. Applicability

This procedure applies to URS field operations.

2. Purpose and Scope

The purpose of this program is to provide employees on field assignments with appropriate personal hygiene facilities, including toilets, wash rooms and eating facilities, and to protect employees from unsanitary conditions.

3. Implementation

Field Activities - Implementation of this program is the responsibility of the Project Manager.

4. Requirements

A. Arrange for the installation of adequate toilet and wash facilities during the planning stage of field projects. Note: Mobile crews having transportation readily available to nearby toilet facilities need not be provided with facilities.

1. Provide job sites without sanitary sewer with one of the following:

- a. Privies (where their use will not contaminate ground or surface water).
- b. Chemical toilets.
- c. Combustion toilets.

2. Provide toilets for employees of each sex at field sites according to the following ratio:

Number of Employees	Minimum # of water closets (1)
1 - 15	1
16 - 25	2
36 - 55	3
56 - 80	4
81 - 110	5
111 - 150	6
Over 150	(2)

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Sanitation

Footnote (1) where toilet facilities will not be used by women, urinals may be provided instead of the minimum specified.

Footnote (2) 1 additional fixture for each additional 40 employees

B. Provide a means for washing hands next to toilet areas.

C. Arrange for fresh potable water to be available.

1. Fixed Facilities

Require backflow prevention devices, testing and administrative controls to be used for all potable water supply branches.

2. Field Sites

a. Require an adequate supply of potable water to be available.

b. Water containers must be tightly closed and marked as to the contents. Containers must have a tap and be refilled daily.

D. Maintain existing toilet and wash facilities.

1. Maintain toilets and toilet area in good repair and in a clean and sanitary condition.

2. Provide paper towels and soap or other suitable sanitizing material for washing hands.

3. Locate hand-washing facilities next to or near toilets.

E. Maintain availability and cleanliness of drinking water.

1. Maintain backflow devices in a sanitary condition.

2. Water coolers and water dispensers are to be kept in a sanitary condition and filled only with potable water.

3. Provide fountain-type dispensers or one-use cups at each water dispenser.

F. Maintain lunchrooms in a clean condition.

1. Require microwave ovens to be used for food only.

URS SAFETY MANAGEMENT STANDARD

Sanitation

2. Require refrigerators that are designated for food storage to be used for food only.
3. Do not allow workers to eat or store foods in areas where toxic materials are handled or stored.
4. Periodically clean lunchrooms.

G. Manage waste generated on site.

1. Release sanitary sewage into sanitary sewer lines or to other proper disposal channels.
2. Do not discharge hazardous waste into the sanitary sewer or storm sewer system.
3. Collect garbage and trash daily.
 - a. Garbage containers located outside buildings should have lids and remained closed. Transport garbage offsite at least weekly.
 - b. At remote field sites where bears and similar wild animals are a hazard, remove garbage from the site daily (do not let garbage remain on site overnight).

H. Prevent pests and vermin from multiplying on site. Eliminate unsanitary conditions that propagate insects or vermin.

- I. Inspect work sites using checksheet provided as Attachment 30-1 for compliance at the beginning of the project and mid -project.

5. Documentation Summary

File completed inspection sheets in the Project Safety File.

6. Resources

- A. U.S. OSHA Construction Standard - Sanitation - 29 CFR 1926.51
(http://www.osha-slc.gov/OshStd_data/1926_0051.html)
- B. U.S. OSHA General Industry Standard - Sanitation - 29 CFR 1910.141
(http://www.osha-slc.gov/OshStd_data/1910_0141.html)

URS SAFETY MANAGEMENT STANDARD
Sanitation

- C. National Interim Primary Drinking Water Regulations 40 CFR 141
(http://www.access.gpo.gov/nara/cfr/waisidx_99/40cfr141_99.html)
- D. Attachment 30-1 - Sanitation Inspection Checksheet
- E. Queensland Workplace Health and Safety -
Code of Practice for Construction Project Amenities

URS SAFETY MANAGEMENT STANDARD

Work Zone Traffic Control

1. Applicability

This procedure applies to URS field operations involving work performed on roads, highways, and similar areas where motor vehicles may be a hazard.

2. Purpose and Scope

This procedure is intended to protect personnel from the hazards associated with work performed on or next to highways and roads.

3. Implementation

Field Activities - Implementation of this program is the responsibility of the Project Manager.

4. Requirements

- A. Review the project in the planning phase to determine if any work will be performed on or adjacent to any road that will disrupt normal traffic flow.
- B. Hire a qualified contractor or have an in house Competent Person devise a traffic control plan based on the work to be performed.
 - 1. Competent persons are those who are knowledgeable about the fundamental principles of temporary traffic control and the work activities to be performed.
 - 2. Traffic control plans will be designed to meet requirements as set in the Manual on Uniform Traffic Control Devices (MUTCD) (Resource A) as well as those rules set by state, county and cities in which work is performed.
 - 3. *Require that the plan is commensurate with the complexity of the project.*
- C. Submit the traffic control plan to the road authority for approval.
 - 1. Submissions will be made to the state department of transportation or highways if state or federal highways are impacted as well.
 - 2. Local county representatives.
 - 3. Local city representatives, if within city limits.

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Work Zone Traffic Control

4. For U.K. operations, submittal is to be made to County Council or local authority.

D. Decide whether to have qualified in house personnel or contract personnel implement the traffic control plan in the field.

1. Certified flaggers may set up work zones.

Flaggers must attend an eight-hour work zone traffic control course as taught by an ATSSA certified instructor (or equivalent).

2. Obtain appropriate traffic control equipment as described in Resource A.

3. For U.K. operations, all operative must be trained in accordance with 'New Road and Street Works' Act.

E. Execute the traffic control plan developed for the job site. Require all personnel who work on/or adjacent to the roadway to wear bright orange, strong yellow-green or fluorescent versions of these colors of approved work zone clothing, including:

1. Vests, at a minimum.
2. Coveralls, if desired.
3. Rainwear or other apparel as needed.

B. Require a Competent Person who is certified as a Worksite Traffic Supervisor supervises flaggers at least once a day.

C. Develop a plan for the periodic inspection and maintenance of the Traffic Control Zone utilizing Attachment 32-1.

5. Documentation Summary

Records required in the Project Safety File:

- A. Copies of traffic control plans used on site.
- B. Training certificates for URS flaggers and Competent Persons.
- C. Qualifications of contracted flaggers and Competent Persons.
- D. Inspection records.

URS SAFETY MANAGEMENT STANDARD

Work Zone Traffic Control

6. Resources

- A. Part VI of the Manual on Uniform Traffic Control Devices (MUTCD)
(<http://www.ohs.fhwa.dot.gov/>)
- B. American Traffic Safety Services Association
(<http://www.atssa.com/>)
- C. ATTSA Flagger Train the Trainer Program
(<http://www.flagger.com/>)
- D. U.K. - Section 7, Road Traffic Act
- E. U.K. - 'New Road and Street Works' Act
- F. Australian Standards SAA HB81.1-.5 - Field Guide for Traffic Controls at Work on Roads
- G. Australian Standards AS1742 - Manual of Uniform Traffic Control Devices
- H. Australian Standards SAA HB69.13-1995. Guide to Traffic Engineering Practice - Pedestrian
- I. Attachment 32-1 - Traffic Control Inspection Checklist
- J. Queensland Workplace Health and Safety -
A Guide to Preparing Workplace Health and Safety Plans for
Worker Safety Within Road Reserves
(<http://www.detir.qld.gov.au/hs/guide/gde26.pdf>)

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URS Corporation Health & Safety Program
TRAFFIC CONTROL INSPECTION CHECKLIST

Project Name: _____ Project Number: _____

Item	Yes	No	How Many?
1. Are any devices missing?			
Do any devices need repair?			
Were all replaced or repaired?			
2. Are any lights(flashers, etc.) not functioning?			
Were they all replaced or repaired?			
3. Are any devices improperly placed?			
Were all positions corrected?			
4. Do any devices need cleaning?			
Were all devices cleaned?			
Additional comments:			

The above check was completed by: _____
 (name/title)

on _____ at _____ ☐ a.m. ☐ p.m.
 (date) (time)

URS SAFETY MANAGEMENT STANDARD

Utility Clearances And Isolation

1. Applicability

This procedure applies to URS projects where personnel may encounter subsurface or overhead utilities.

2. Purpose and Scope

Many field activities are conducted near aboveground and underground utilities. The primary purpose of this Standard is to establish operating requirements that will permit employees to work safely in the vicinity of electrical, natural gas, fuel, water, and other utility systems and installations. The secondary purpose is to prevent economic damage to utility systems from operations associated with project-related activities.

The term "utility clearance" includes

- A. The positive locating of utility systems in or near the work area.
- B. A signed statement by an appropriate representative attesting to the location of underground utilities and/or the positive de-energizing (including lockout) and testing of electrical utilities.

Note that in some cases, utility representatives may deem it appropriate or necessary to use insulating blankets to isolate a power line; this is an acceptable alternative to positive de-energizing (only utility representatives can make the determination).

"Contact" with overhead power lines is considered to occur when equipment is closer to power lines than permitted by the criteria in the table in Section 4.0.C.2.b below. (See note for U.K. operations).

3. Implementation

Field Operations - Implementation of this procedure is the responsibility of the Project Manager.

4. Requirements

A. Time for Completion

Complete utility clearances prior to the start of any work in the area of the utility that could feasibly result in contact with or damage to that utility.

B. Local Regulations

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Utility Clearances And Isolation

Research local codes and regulations regarding utility locating and isolation requirements. Utility companies and locating services are among the appropriate resources.

C. Overhead Power Lines

1. Proximity to Power Lines

No work is to be conducted within 50 feet (15 meters) of overhead power lines without first contacting the utility company to determine the voltage of the system. No aspect of any piece of equipment is to be operated within 50 feet (15 meters) of overhead power lines without first making this determination.

2. Operations adjacent to overhead power lines are PROHIBITED unless one of the following conditions is satisfied:

- a. Power has been shut off, positive means (such as lockout) have been taken to prevent the lines from being energized, lines have been tested to confirm the outage, and the utility company has provided a signed certification of the outage.
- b. The minimum clearance from energized overhead lines is as shown in the table below, or the equipment will be repositioned and blocked so that no part, including cables, can come within the minimum clearances shown in the table.

MINIMUM DISTANCES FROM POWERLINES	
Powerlines Nominal System kV	Minimum Required Distance
0-50	10 feet (3 meters)
51-100	12 feet (3.6 meters)
101-200	15 feet (4.6 meters)
201-300	20 feet (6.1 meters)
301-500	25 feet (7.6 meters)
501-750	35 feet (10.7 meters)
751-1000	45 feet (13.7 meters)

Note: for U.K. operations, the specific safe distance is determined by the utility company.

- c. The power line(s) has been isolated through the use of insulating blankets which have been properly placed by the utility. If insulating blankets are used, the utility will determine

URS SAFETY MANAGEMENT STANDARD

Utility Clearances And Isolation

the minimum safe operating distance; get this determination in writing with the utility representative's signature.

3. All inquiries regarding electric utilities must be made in writing and a written confirmation of the outage/isolation must be received by the Project Manager prior to the start of work.

D. Underground Utilities

1. Do not begin subsurface work (e.g., trenching, excavation, drilling, etc.) until a check for underground utilities and similar obstructions has been conducted. The use of as-built drawings must be confirmed with additional geophysical or other survey.
2. Contact utility companies or the state/regional utility protection service at least two (2) working days prior to excavation activities to advise of the proposed work, and ask them to establish the location of the utility underground installations prior to the start of actual excavation.
3. Obtain utility clearances for subsurface work on both public and private property. Clearances are to be in writing, signed by the party conducting the clearance.
4. Protect and preserve the markings of approximate locations of facilities until the markings are no longer required for safe and proper excavations. If the markings of utility locations are destroyed or removed before excavation commences or is completed, the Project Manager must notify the utility company or utility protection service to inform them that the markings have been destroyed.
5. Do not conduct mechanical-assisted subsurface work (e.g., powered drill rig, mechanical excavator, etc.) within five (5) feet (1.5 meters) of a confirmed or suspected utility or other subsurface structure. Confirm minimum distances for mechanical-assisted subsurface work with the utility owner, as distances beyond this five foot minimum may be required.
6. Subsurface work within five feet (1.5 meters) of a confirmed or suspected utility or other subsurface structure must be done by hand (e.g., hand auger, shovel) to the point where the obstruction is visually located and exposed. Once the obstruction location is confirmed in this manner, mechanical-assisted work may commence.

URS SAFETY MANAGEMENT STANDARD

Utility Clearances And Isolation

7. Reference SMS 13, "Excavation Safety" for additional information regarding subsurface operations.

E. Training

Conduct a site briefing for site employees regarding the hazards associated with working near the utilities and the means by which the operation will maintain a safe working environment. Detail the method used to isolate the utility and the hazards presented by breaching the isolation.

5. Documentation Summary

File these records in the Safety Filing System:

1. Documents requesting utility clearance.
2. Documents confirming utility clearance.
3. Training/briefing documentation of each isolation.

6. Resources

1. Utility Locating Services (typically under "Utility" in the Yellow Pages)
2. NIOSH Alert - Preventing Electrocutions from Contact Between Cranes and Power Lines
(<http://www.cdc.gov/niosh/crane.html>)
3. One Call Utility Locating List
(<http://www.underspace.com/refs/ocdir.htm>)
4. National Utility Locating Contractor's Association
(<http://www.underspace.com/nu/index.htm>)
5. U.K. - Health and Safety Executive GS6

URS SAFETY MANAGEMENT STANDARD

Respiratory Protection

1. Applicability

This program defines responsibilities and procedures and is applicable to URS operations that may require the use of respiratory protection including Immediately Dangerous to Life and Health (IDLH) and emergency conditions. This program also addresses the voluntary use of respirators.

2. Purpose and Scope

The purpose of this procedure is to protect those employees performing operations for which exposures can not be controlled by use of conventional engineering or administrative controls and prior to establishing a negative air exposure assessment, and to require that respiratory protective equipment is selected, used, maintained, and stored in accordance with acceptable practices.

3. Implementation

Laboratory/Office/Shop Locations - Implementation of this program is the responsibility of the Office Manager.

Field Activities - Implementation of this program is the responsibility of the Project Manager.

Program Administration- URS Health and Safety Director is responsible for the development and annual review of this program.

URS Health and Safety Program Representatives are responsible to:

- Assist responsible employees in the implementation of the program.
- Assessing local compliance with the program.

4. Requirements

A. Determine if respirators are needed or going to be used for hazardous jobs before assigning that job to an employee.

1. If the determination is that a potential for respiratory hazards exists with any portion of that job activity then, complete Attachment 42-1.
2. Contact a URS Health and Safety Program Representative if any of the questions in Attachment 42-1 are checked "yes."

URS SAFETY MANAGEMENT STANDARD

Respiratory Protection

3. Follow instructions in Attachment 42-2 for employees who wish to voluntarily use dust masks.
4. Follow all the requirements of this procedure for employees who wish to voluntarily use tight-fitting (e.g., air purifying) respirators.
5. Required respirators will be paid for by URS and will be provided without cost to the employee.

B. Select the proper respirator for the job.

1. For those jobs identified in Attachment 42-1, contact a URS Health and Safety Program Representative for assistance in respirator selection.
2. Contact a URS Health and Safety Program Representative for follow up if there are any problems implementing the recommendations made.

C. Require employees who will use respirators to be medically qualified before fit testing and assigning them a respirator.

1. For program details, refer to SMS 24, Medical Screening and Surveillance.
2. Require that employees have a current and accurate Medical Surveillance form (Attachment 24-2)
3. Obtain a copy of the employee's Health Status Medical Report from the Health and Safety Representative. The consulting occupational physician of the medical service provider following each work related examination issues the Health Status Medical Report. Employees cannot be assigned respirators unless they are medically cleared for respirator use.

D. Require respirator users to receive appropriate training.

1. All respirator users must be trained:
 - a. Before they are assigned a respirator.
 - b. Annually thereafter.
 - c. Whenever a new hazard or job is introduced.

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Respiratory Protection

- d. Whenever employees fail to demonstrate proper use or knowledge.
- 2. Training must address, at a minimum, the following:
 - a. Why the respirator is necessary, and what conditions can make the respirator ineffective.
 - b. What the limitations and capabilities of the respirators are.
 - c. How to use respirators effectively in emergency situations.
 - d. How to inspect, put on and remove, and check the seals of the respirator.
 - e. What the respirator maintenance and storage procedures are.
 - f. How to recognize medical signs and symptoms that may limit or prevent effective use of the respirator.
- E. Require respirator users to be fit tested.
 - 1. Any employee who has been assigned a reusable respirator must be fit tested on an annual basis (no more than one year may elapse between fit tests), or when the employee is assigned a respirator of a different make, type or size from that previously tested.
 - 2. Fit testing can be performed by contract or in house personnel.
 - 3. Obtain a signed written copy of the fit test results. The fit test results should include:
 - a. Employee's name and social security number.
 - b. Respirator brand, model and size fitted for.
 - c. Date fit tested.
 - d. Method of fit testing used.
 - e. Name and signature of fit tester.
 - f. Statement that fit test protocol met the requirements of 29 CFR 1910.134.

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Respiratory Protection

g. Manufacturer and serial number of fit testing apparatus.

A fit test results form is available at Attachment 42-5.

F. Provide qualified employees with respirator(s) and adequate amounts of parts and cartridges.

1. Assign employees whose duties require respirators their own respirator for which they have been fit tested.
2. Provide special eyeglass inserts designed for the respirator if an employee must wear eyeglasses with a full facepiece respirator. Contact lenses may be worn when wearing a full facepiece respirator.

G. Require respirators to be used properly.

1. Prohibit facial hair where the respirator-sealing surface meets the wearer's face.
2. Require employees to perform a positive and negative fit check every time the respirator is put on.
3. Employees will leave the area where respirators are being used:
 - a. Before removing the facepiece for any reason.
 - b. To change cartridges.
 - c. If any of the following is detected:
 1. Vapor or gas breakthrough.
 2. Leakage around the facepiece.
 3. Changes in breathing resistance.
4. Use cartridges with End of Service Life Indicators or determine the respirator cartridge changeout schedule. See Attachment 42-4 for Guidance.

H. Require respirators to be cleaned and stored properly.

1. Clean and disinfect respirators after each use.

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Respiratory Protection

2. Store respirators in a plastic bag or case and in a clean location.
3. Inspect respirators before use and after each cleaning.
- I. Address issues associated with special use respirators self-contained breathing apparatus; air supply respirators; emergency use respirators).
 1. Self Contained Breathing Apparatus

Inspect self-contained breathing apparatus and other emergency use respirators monthly and after each use in accordance with manufacturer's instructions.
 2. Air Supplied Respirators
 - a. Air used for atmosphere-supplying respirators must meet or exceed the requirements for Type 1 - Grade D breathing air. Never use oxygen.
 1. A certificate of analysis must accompany bottled air.
 2. Compressors used to supply breathing air must:
 - i. Prevent entry of contaminated air into the air supply.
 - ii. Minimize moisture content.
 - iii. Have suitable in-line sorbent beds and filter to provide appropriate air quality.
 - iv. Have a high carbon monoxide alarm that sounds at 10 ppm.
 - b. Couplings on air hose lines must be incompatible with other gas systems.
- J. Require follow up training and medical surveillance to be provided as directed.
 1. Provide follow-up physical examinations as directed by the SMS 24-3, Medical Screening and Surveillance Exam Protocol table.
 2. Provide follow-up physicals as directed by the Regional Medical Surveillance Administrator.

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Respiratory Protection

3. Provide annual refresher training.
4. Provide annual fit testing.

5. Documentation Summary

A. Laboratory

1. File these records in the Laboratory Safety Filing System
 - a. Completed forms:
 1. "Identifying When A Respirator Is Needed" - Attachment 42-1; and,
 2. "Respirator Standard Operating Procedure" - Attachment 42-3.;
 - b. Employee Health Status Medical Report includes clearance for respirator use.
 - c. Employee Fit Test Records; and,
 - d. Employee Respirator Training Records.
2. Send a copy of the following records to the Regional Health and Safety Manager:
 - a. Completed "Voluntary Use of Respirators" form - Attachment 42-2.
 - b. Employee Fit Test Records.
 - c. Employee Respirator Training Records.

B. Field

1. File these records in the Project Health and Safety File:
 - a. Completed forms:
 1. "Identifying When A Respirator Is Needed" - Attachment 42-1; and,

URS SAFETY MANAGEMENT STANDARD **Respiratory Protection**

2. "Respirator Standard Operating Procedure" - Attachment 42-3.
3. Employee Health Status Medical Report includes clearance for respirator use.;
4. Employee Fit Test Records; and,
5. Employee Respirator Training Records.

2. Send a copy of the following records to the Regional Health and Safety Manager:

- a. Completed "Voluntary Use of Respirators" form - Attachment 42-2;.
- b. Employee Fit Test Records; and,
- c. Employee Respirator Training Records.

6. Resources

- A. U.S. OSHA Standard - Respiratory Protection - 29 CFR 1910.134
- B. U.S OSHA Technical Links - Respiratory Protection
- C. ANSI Z88.6, Respirator Use – Physical Qualifications for Personnel, Current Revision
- D. ANSI Z88.2, Respiratory Protection, Current Revision
- E. 3M Cartridge Service Life Interactive Program
- F. Australian Standards AS/N25 1715 - 1994. Selection, Use, and Maintenance of Respiratory Protection Devices
- G. Australian Standards HB9-1994. Occupational Personal Protection
- H. AIHA, The Occupational Environment - Its Evaluation and Control

The following documents are PDF files which must be read with Adobe Reader:

- I. NIOSH Respirator Decision Logic

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Respiratory Protection

- J. NIOSH Guide to Industrial Respiratory Protection
- K. Attachment 42-1 - Identifying When a Respirator is Needed
- L. Attachment 42-2 - Voluntary Use of Respirators
- M. Attachment 42-3 - Respirator Standard Operating Procedure
- N. Attachment 42-4 - Respiratory Cartridge Change Schedule
- O. Attachment 42-5 - Fit Test Results Form
- P. Medical Screening and Surveillance Program - SMS 24

URS Corporation
URS Corporation Health & Safety Program
IDENTIFYING WHEN A RESPIRATOR IS NEEDED

Site Location: _____ Date: _____

Name of Person Performing Evaluation: _____

Project: _____

Answer the questions below for the jobs you are to perform on site. If a "yes" response is checked, consult with a URS Corporation Health and Safety Professional to determine:

- *if a respirator is truly needed for the job, as well as,*
- *the type of respirator needed for the job.*

MATERIAL USED OR PROCESS TO BE PERFORMED	YES Respirator may be needed	NO	NOTES
<i>Abrasive Blasting</i> <ul style="list-style-type: none"> • Abrasive blasting (with any type of grit or material) will be performed. • Employee will fill abrasive blasting pots or perform clean-up activities. • Employee will be in a contained area where abrasive blasting is taking place. 			
<i>Acids</i> <ul style="list-style-type: none"> • Liquid or powder acids will be used in a situation where acid vapors, mists or dust may be breathed. 			
<i>Adhesives</i> <ul style="list-style-type: none"> • Aerosol-propelled adhesives are to be used in areas where there is no or insufficient local exhaust ventilation. • Two-part adhesives (mix part one with two, let set then use) are to be used in areas where there is limited ventilation. 			
<i>Alkalis/Bases/Caustics</i> <ul style="list-style-type: none"> • Powdered alkalis will be used in a situation where an airborne dust may be breathed. 			
<i>Asbestos Abatement</i> <ul style="list-style-type: none"> • Asbestos will be removed, repaired or sampled. • Employees will be inspecting or overseeing areas where asbestos will be removed or disturbed. 			

MATERIAL USED OR PROCESS TO BE PERFORMED	YES Respirator may be needed	NO	NOTES
<i>Cleaning Compounds</i> <ul style="list-style-type: none"> Degreasers or carbon removers will be used in areas where local exhaust ventilation is not provided. Aerosol propelled cleaning compounds will be used in areas where there is no local exhaust ventilation. Degreasers or carbon removers will be used in voids, tanks, or other confined spaces. 			
<i>Corrosion Preventive Compounds</i> <ul style="list-style-type: none"> Corrosion prevention compounds, including chemical conversion compounds and corrosion inhibitors, will be used in areas where there is no local exhaust ventilation. 			
<i>Detergents/Soaps</i> <ul style="list-style-type: none"> Ammonia based detergents will be used in large quantity (more than five gallons) in areas where local exhaust ventilation cannot be provided. Large quantities (5 or 55 gallon containers) of high pH powder detergent/soap will be used in a situation where dust may be breathed. 			
<i>Fuels</i> (including regular or unleaded gasoline, kerosene, diesel fuel, JP-5) <ul style="list-style-type: none"> Employees will be inside unventilated fuel cells or other confined spaces containing fuels. 			
<i>Grinding, Cutting, Sanding</i> <ul style="list-style-type: none"> Cutting, grinding or sanding surfaces that have coatings containing lead, cadmium, chromium, zinc or beryllium. Cutting, grinding or sanding surfaces that are concrete or glass without use of ventilation or water. 			
<i>Hazardous Waste Sites</i> <ul style="list-style-type: none"> Employees will be performing tasks on a hazardous waste site that requires the use of respirator (as indicated in the site safety & health plan). Employees will be performing site assessments on potential hazardous waste sites. 			
<i>Hydraulic Fluids</i> (including petroleum-based fluids, synthetic fire-resistant fluids, and water based fire resistant fluids) <ul style="list-style-type: none"> Hydraulic fluids and the vapors generated will not be exhausted using local exhaust ventilation. Synthetic fire-resistant fluids or water-based fire-resistant fluids will be used in an area where the air is contaminated with visible mist or spray from hydraulic fluids. 			

URS Corporation

URS Corporation Health & Safety Program IDENTIFYING WHEN A RESPIRATOR IS NEEDED

Site Location: _____ Date: _____

Name of Person Performing Evaluation: _____

Project: _____

Answer the questions below for the jobs you are to perform on site. If a "yes" response is checked, consult with a URS Corporation Health and Safety Professional to determine:

- if a respirator is truly needed for the job, as well as,
- the type of respirator needed for the job.

MATERIAL USED OR PROCESS TO BE PERFORMED	YES Respirator may be needed	NO	NOTES
Abrasive Blasting <ul style="list-style-type: none"> Abrasive blasting (with any type of grit or material) will be performed. Employee will fill abrasive blasting pots or perform clean-up activities. Employee will be in a contained area where abrasive blasting is taking place. 			
Acids <ul style="list-style-type: none"> Liquid or powder acids will be used in a situation where acid vapors, mists or dust may be breathed. 			
Adhesives <ul style="list-style-type: none"> Aerosol-propelled adhesives are to be used in areas where there is no or insufficient local exhaust ventilation. Two-part adhesives (mix part one with two, let set then use) are to be used in areas where there is limited ventilation. 			
Alkalis/Bases/Caustics <ul style="list-style-type: none"> Powdered alkalis will be used in a situation where an airborne dust may be breathed. 			
Asbestos Abatement <ul style="list-style-type: none"> Asbestos will be removed, repaired or sampled. Employees will be inspecting or overseeing areas where asbestos will be removed or disturbed. 			

MATERIAL USED OR PROCESS TO BE PERFORMED	YES Respirator may be needed	NO	NOTES
<i>Cleaning Compounds</i> <ul style="list-style-type: none"> Degreasers or carbon removers will be used in areas where local exhaust ventilation is not provided. Aerosol propelled cleaning compounds will be used in areas where there is no local exhaust ventilation. Degreasers or carbon removers will be used in voids, tanks, or other confined spaces. 			
<i>Corrosion Preventive Compounds</i> <ul style="list-style-type: none"> Corrosion prevention compounds, including chemical conversion compounds and corrosion inhibitors, will be used in areas where there is no local exhaust ventilation. 			
<i>Detergents/Soaps</i> <ul style="list-style-type: none"> Ammonia based detergents will be used in large quantity (more than five gallons) in areas where local exhaust ventilation cannot be provided. Large quantities (5 or 55 gallon containers) of high pH powder detergent/soap will be used in a situation where dust may be breathed. 			
<i>Fuels</i> (including regular or unleaded gasoline, kerosene, diesel fuel, JP-5) <ul style="list-style-type: none"> Employees will be inside unventilated fuel cells or other confined spaces containing fuels. 			
<i>Grinding, Cutting, Sanding</i> <ul style="list-style-type: none"> Cutting, grinding or sanding surfaces that have coatings containing lead, cadmium, chromium, zinc or beryllium. Cutting, grinding or sanding surfaces that are concrete or glass without use of ventilation or water. 			
<i>Hazardous Waste Sites</i> <ul style="list-style-type: none"> Employees will be performing tasks on a hazardous waste site that requires the use of respirator (as indicated in the site safety & health plan). Employees will be performing site assessments on potential hazardous waste sites. 			
<i>Hydraulic Fluids</i> (including petroleum-based fluids, synthetic fire-resistant fluids, and water based fire resistant fluids) <ul style="list-style-type: none"> Hydraulic fluids and the vapors generated will not be exhausted using local exhaust ventilation. Synthetic fire-resistant fluids or water-based fire-resistant fluids will be used in an area where the air is contaminated with visible mist or spray from hydraulic fluids. 			

MATERIAL USED OR PROCESS TO BE PERFORMED	YES Respirator may be needed	NO	NOTES
Inspection Penetrants (including Flouro-finder, water indicating pastes, and penetrant removers) <ul style="list-style-type: none"> An aerosol-propelled inspection penetrant will be used in an area where local exhaust ventilation cannot be provided, or in a situation where the solvent vapors can be breathed. 			
Lead Abatement Activities <ul style="list-style-type: none"> Lead containing materials will be disturbed, removed or sampled. Employees will be inspecting or overseeing areas where lead will be removed or disturbed. 			
Lubricants/Oils <ul style="list-style-type: none"> Aerosol lubricants/oils will be sprayed with no immediate exhaust ventilation. 			
Oxidizers (materials that give off oxygen including chlorine laundry bleach, calcium hypochlorite, calcium oxide, oxygen candles, lithium hydroxide, hydrogen peroxide, and sodium dichromate) <ul style="list-style-type: none"> Oxidizers containing organic chlorine will be used in a situation where the dusts/vapors may be breathed. Powdered oxidizers will be used in a situation where airborne dust may be breathed. 			
Paint Materials (including paints, primers, thinners, enamels, lacquers, strippers, coatings and varnishes) <ul style="list-style-type: none"> Paint materials will be spray applied in areas where there is no local exhaust ventilation. Two part (mix part a with part b, let set, then apply) polyurethane or epoxy polyamide paints will be brush or spray applied. Paints containing lead, chromium, cadmium, beryllium, and zinc (refer to the MSDS). Paint materials will be applied in confined spaces. 			
Solvents (including hydrocarbon solvents such as acetone, methyl ethyl ketone, toluene, xylene, and alcohols, as well as mixed solutions like antifreeze, heat transfer fluid, turpene, dope and naphtha thinner) <ul style="list-style-type: none"> Local exhaust ventilation will not be provided and work will involve breathing solvent vapors. Solvents will be used within confined spaces. Solvents will be applied using aerosols. 			
Thermal Insulation (including asbestos & non-asbestos materials like pipe lagging, fiberglass insulation, boiler insulation, packing materials and floor/ceiling tiles) <ul style="list-style-type: none"> Insulation will be disturbed, removed or sampled. 			

MATERIAL USED OR PROCESS TO BE PERFORMED	YES Respirator may be needed	NO	NOTES
Water Treatment Chemicals (includes corrosive chemicals such as tri-sodium phosphate, hardness buffer, titrating solution, morpholine, caustic soda, citric acid and nitric acid as well as toxic chemicals such as mercuric nitrate, hydrazine, EDTA and sodium nitrate) <ul style="list-style-type: none"> • Morpholine, EDTA, or hardness buffer/titrating solution is to be used in poorly ventilated spaces. • Powdered water treatment chemicals will be used in a situation where chemical dusts may be breathed. 			
Welding/Brazing <ul style="list-style-type: none"> • Welding will be performed in confined spaces. • Welding galvanized metal or stainless steel. • Brazing with cadmium or lead. 			
For Any of The Above Listed Activities <ul style="list-style-type: none"> • A employee will be in the immediate area - within 10 feet of the job or operation, or • Employee will be inside confined space where activities are taking place, or • Employee will be inside a "controlled area" such as found in asbestos abatement, lead abatement, radiation control area, or a hazardous waste site. 			
Material Safety Data Sheets <ul style="list-style-type: none"> • For any chemical product used, a respirator is recommended. 			
Product Labels <ul style="list-style-type: none"> • For any chemical or process that indicates respirators should be used. 			
Product Use Instructions For any product used, instructions indicate a respirator should be used.			
Standard Operating Procedures A Standard Operating Procedure indicates the use of a respirator.			

URS Corporation**URS Corporation Health & Safety Program
VOLUNTARY USE OF RESPIRATORS**

Instructions: Have the employee that is opting to use a respirator for non-overexposure conditions read this page, then sign on the bottom of the page. Forward a copy of the signed form to the Regional Training Records Administrator, and maintain a copy in the employee's personnel file.

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for employees. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the employee. Sometimes employees may wear respirators to avoid exposures to hazards, even if the amount of the hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your own voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not pose a hazard.

You should do the following:

1. Read and follow all instructions provided by the manufacture on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety & Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect you against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, fumes, smoke or very small solid particles.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.
5. If you have any health conditions (asthma; high blood pressure; emphysema; heart disease) that could be aggravated by using a respirator, you should check with your doctor before using one.

I have read and understand this information on: _____ (date)

Employee's name: _____

Employee's signature: _____

URS Corporation

URS Corporation Health & Safety Program RESPIRATOR STANDARD OPERATING PROCEDURE

Job Task Reviewed: _____

Date Reviewed: _____

Task Reviewed by: _____

ADMINISTRATIVE PROCEDURES

1. All respirator users must be medically qualified to use respirators. Point of contact for scheduling is the Regional Medical Surveillance Administrator.
2. Respirator users must be trained annually in respirator use and fit tested annually.
3. Respirator will be used only by the person to whom it was issued.
4. Persons using glasses who are required to use a full-face respirator may use contact lenses or eyeglass inserts designed for the respirator.

GUIDANCE FOR SELECTION OF RESPIRATOR & CARTRIDGES/FILTERS

1. _____ respirators are currently being issued and used for the following job activity: _____
2. The respirator will be equipped with the following cartridges/filters: _____
3. Filters are to be changed when the breathing resistance increases.
4. Cartridges are to be changed: _____ or when the contaminant you are protecting yourself from can be smelled or tasted.

FIT TESTING & FIT CHECKING

1. Fit testing is required annually. To arrange for fit testing call your local safety representative.
2. Respirator users will "fit check" the respirator every time the respirator is put on:
 - **Negative Check** - cover filters/cartridges with palms of hands and breath in, leakage should not be detected around the face seal of the respirator. Do not use if leakage is detected.
 - **Positive Check** - cover the exhalation valve cover with palm of hand and blow out slightly, leakage should not be detected around the respirator seal.
 - **For Air Supply Respirators** - kink or close off air supply hose and breath in, leakage should not be detected around the face seal of the respirator.

CLEANING & MAINTENANCE OF RESPIRATOR

1. Clean and disinfect respirator after every use.
2. Inspect respirator after every day in use to ensure parts are not missing. Replace missing parts from stock supply.
3. Store clean respirator in labeled plastic bag out of direct sunlight.
4. Do not alter respirator in any way.

URS Corporation

URS Corporation Health & Safety Program RESPIRATOR CARTRIDGE CHANGE SCHEDULE

A cartridge change schedule must be developed for cartridges or canisters used with air purifying respirators that do not have an End of Service Life Indicator (ESLI). The purpose of this is to prevent contaminants from breaking through the respirator's sorbent cartridge(s), and thereby over-exposing employees. NIOSH has approved ESLIs for only four cartridges or canisters (mercury vapor, carbon monoxide, ethylene oxide, and hydrogen sulfide). Historically we have relied on the warning properties (odor, irritation) of a contaminant to dictate cartridge change. OSHA no longer allows this as the sole basis for changing respirator cartridges. In developing a change schedule the following factors should be considered:

- Contaminants.
- Concentration.
- Frequency of use (continuously or intermittently throughout the shift).
- Temperature and humidity.
- Work rate.
- The presence of potentially interfering chemicals.

The worst case conditions should be assumed to avoid early breakthrough. This must be documented in the project health and safety plan or, in the cases of office or labs, in the site specific Respiratory Protection Program.

Sources of Help

Manufacturers

3M has an interactive "Cartridge Service Life" program that can be downloaded for free (<http://www.mmm.com/market/safety/ohes2/index.html>)

This program will estimate cartridge service life for 3M products against many contaminants. The program does not evaluate the service life against mixtures (multiple contaminants). Because of the complexity in evaluating mixtures, OSHA offers the following guidance:

- When the individual compounds in the mixture have similar breakthrough times (i.e., within one order of magnitude), service life of the cartridge should be established assuming the mixture stream behaves as a pure system of the most rapidly migrating component with the shortest breakthrough time (i.e., sum up the concentration of the components).
- Where the individual compounds in the mixture vary by 2 orders of magnitude or greater, the service life may be based on the contaminant with the shortest breakthrough time.

Rule of Thumb (*"The Occupational Environment - Its Evaluation and Control"*)

- If the chemical's boiling point is >70°C and the concentration is less than 200 ppm you can expect a service life of 8 hours at a normal work rate.
- Service life is inversely proportional to work rate.
- Reducing concentration by a factor of 10 will increase service life by a factor of 5.
- Humidity above 85% will reduce service life by 50 %.

OSHA Interpretation

The OSHA inspection procedures for the respiratory protection standard specifies that where contaminant migration is possible, respirator cartridges/canisters should be changed after each work shift where exposure occurs unless there is objective data to the contrary (desorption studies) showing the performance in the conditions and schedule of use/non-use found in the workplace.

Respiratory Fit Test Record

Attachment 42-5

Name: _____

Social Security No: _____

Company/Office: _____

Last Medical Exam: _____

Fit Test Date: _____

Corrective Lenses Needed: Yes ☐ No ☐

Briefed on fundamental principles of respiratory protection, use, selection, inspection cleaning, maintenance and storage of equipment. Yes ☐ No ☐

Isoamyl acetate odor recognition Yes ☐ No ☐

	<u>RESPIRATOR 1</u>	<u>RESPIRATOR 2</u>	<u>RESPIRATOR 3</u>
Equipment Type	_____	_____	_____
Manufacturer's Name	_____	_____	_____
Model	_____	_____	_____
Size	_____	_____	_____
Facepiece Composition (Rubber/Silicone)	_____	_____	_____

<u>TEST PERFORMED</u>	<u>RESPIRATOR 1</u>	<u>RESPIRATOR 2</u>	<u>RESPIRATOR 3</u>
Negative Pressure Test:	P <input type="checkbox"/> F <input type="checkbox"/>	P <input type="checkbox"/> F <input type="checkbox"/>	P <input type="checkbox"/> F <input type="checkbox"/>
Positive Pressure Test:	P <input type="checkbox"/> F <input type="checkbox"/>	P <input type="checkbox"/> F <input type="checkbox"/>	P <input type="checkbox"/> F <input type="checkbox"/>
Isoamyl Acetate Vapor Test:	P <input type="checkbox"/> F <input type="checkbox"/>	P <input type="checkbox"/> F <input type="checkbox"/>	P <input type="checkbox"/> F <input type="checkbox"/>
Irritant Smoke Test:	P <input type="checkbox"/> F <input type="checkbox"/>	P <input type="checkbox"/> F <input type="checkbox"/>	P <input type="checkbox"/> F <input type="checkbox"/>

This qualitative fit test protocol has been adapted from OSHA Respiratory Protection Standard 29 CFR 1910.134, Appendix A.

Examiner's Name (Please Print)

Examiner's Signature

Date

Employee's Signature

Date

URS

URS SAFETY MANAGEMENT STANDARD

Personal Monitoring (Industrial Hygiene)

1. Applicability

This standard applies to URS operations where employees may be exposed to unacceptable concentrations of hazardous air contaminants.

2. Purpose and Scope

This standard is intended to assist and provide guidance to URS personnel that need to conduct personal industrial hygiene monitoring

Personal monitoring is to be conducted under the following conditions:

- A. Where directed by a site-specific health and safety plan.
- B. Where employees are exposed to known or suspected human carcinogens.
- C. Where regulations require "initial exposure assessments." The only exception to conducting an "initial exposure assessment" where there is a regulatory requirement to do so is when similar exposure assessments have been conducted under similar site conditions within one year prior to the start of work on the current project.

Retain a copy of the referenced initial exposure assessment and place it in the Project Safety File.

2. Implementation

Laboratory Locations - Implementation of this standard is the responsibility of the Laboratory Manager.

Field Activities - Implementation of this standard is the responsibility of the Project Manager.

3. Requirements

A. Procedures for Personal Industrial Hygiene Monitoring

- 1. Collect samples using the applicable methodologies established by either NIOSH or OSHA. Require the selected laboratory to utilize the applicable analytical methodologies.

URS SAFETY MANAGEMENT STANDARD

Personal Monitoring (Industrial Hygiene)

2. Document personal monitoring activities using a URS Industrial Hygiene Monitoring Form (Attachment 43-1) and require that all Chain of Custody forms are properly completed.

B. Evaluation of Personal Monitoring Results

1. Require that the analytical results be evaluated by a URS Health and Safety Program Representative.
2. Obtain a written evaluation report from the URS Health and Safety Program Representative. If exposures exceed the Action Level and/or Permissible Exposure Limit for the air contaminant(s) of concern, a verbal report is to be made to the Project Manager immediately, and the evaluation report will include required corrective actions.
3. Evaluation reports are to be completed within five working days of the receipt of the analytical results.

C. Communication of Sample Results and Evaluation

1. Provide copies of the evaluation report to the employee(s) monitored and to employees working in the area for whom the exposures could be representative.
2. Provide a copy of the evaluation report and monitoring data to the Medical Surveillance Administrator.

D. Corrective Actions

Implement required corrective actions immediately.

4. Documentation Summary

Maintain in the Project Safety File:

- A. Calibration data
- B. Completed IH Monitoring Form(s)
- C. Evaluation Report with sample results
- D. Relevant prior initial exposure assessments
- E. Provide to affected employees:

URS SAFETY MANAGEMENT STANDARD

Personal Monitoring (Industrial Hygiene)

- Evaluation Report with sample results

F. Provide to the Medical Surveillance Administrator:

- Evaluation Report with sample results
- List of employees affected by the sampling

5. Resources

- A. OSHA Analytical Methods
- B. OSHA Chemical Sampling Information
- C. American Industrial Hygiene Association, The Occupational Environment, Its Evaluation and Control.
- D. American Conference of Governmental Industrial Hygienists. Air Sampling Instruments for Evaluation of Atmospheric Contaminants.
- E. U.K. - 'Control of Substances Hazardous to Health'
- F. NIOSH Analytical Methods
- G. Attachment 43-1 - IH Monitoring Form

URS SAFETY MANAGEMENT STANDARD

Back Injury Prevention

1. Applicability

This procedure applies to URS operations where personnel perform manual lifting.

2. Purpose and Scope

The purpose of this procedure is to prevent back injuries to URS personnel.

3. Implementation

Office Locations - Implementation of this procedure is the responsibility of the Office Manager.

Field Activities - Implementation of this procedure is the responsibility of the Project Manager.

4. Requirements

A. Safe Lifting Practices in the Office

1. Require that personnel receive the training described in (C) below.
2. Evaluate all assignments that involve lifting, such as moving boxes of files and paper, computer equipment, and the like to see that the task can be completed without risk of back injury to assigned personnel.
3. Provide material handling devices, such as carts and dollies, to assist in the safe moving of materials.
4. Obtain outside assistance, such as contract movers, if the job cannot be safely accomplished by URS personnel.
5. Require that heavier items are stored on lower shelving units.

B. Safe Lifting Practices in the Field

1. Recognize that field assignments tend to be lifting-intensive, and that URS has a duty to provide the means by which personnel can perform lifting duties without risk of injury.
2. Require that personnel receive the training described in (C) below.

URS SAFETY MANAGEMENT STANDARD

Back Injury Prevention

3. Evaluate all field assignments that involve lifting to see that the tasks can be completed without risk of back injury to assigned personnel.
4. Provide material handling devices, such as carts, dollies, trucks with lift gates, to assist in the safe moving of materials. If required, assign additional personnel to the task.
5. Direct field personnel not to assist in lifting tasks that are normally undertaken by subcontractor personnel.
6. Contact a URS Health and Safety Program Representative when assistance is necessary to evaluate a lifting task that may pose a back injury risk to assigned personnel.

C. Training

1. Require that personnel who may have lifting as part of their duties receive training that includes the following topics:
 - a. Showing personnel how to avoid unnecessary physical stress and strain.
 - b. Teaching personnel to become aware of what they can comfortably handle without undue strain.
 - c. Instructing personnel on the proper use of equipment.
 - d. Teaching personnel to recognize potential hazards and how to prevent or correct them.
2. This training must be completed prior to an employee being assigned to a task that involves lifting.

D. Office Moves and Relocations

1. Utilize professional movers (who are appropriately insured) to move office furniture such as desks, file cabinets, and bookcases, even if such a move is only between offices or cubicles at a particular location (on-site move).
2. Utilize professional movers for intensive moving of file boxes and other heavy materials.

URS SAFETY MANAGEMENT STANDARD

Back Injury Prevention

E. Material Packaging

1. Use only smaller size (<18") file ("Banker") boxes for file storage, as the larger (>18") boxes are awkward and readily overloaded.
2. Use only smaller coolers for field samples, as the larger coolers are awkward and readily overloaded.

5. Documentation Summary

File the following documents in the Office Health and Safety File

- Training rosters

File the following documents in the Project Health and Safety File

- Training rosters

6. Resources

- ##### **A. Work Practices Guide for Manual Lifting, NIOSH**

URS SAFETY MANAGEMENT STANDARD

Subcontractor Health and Safety Requirements

1. Applicability

This procedure is applicable to subcontractors retained by URS to perform construction (including drilling and excavation), alteration, demolition, and/or repair activities utilizing their own workforce or equipment. This procedure is applicable to the operations of subcontractors and sub-subcontractors of any tier.

This procedure does not apply to third party contractor operations where there is no subcontract relationship between the contractor and URS Corporation. Health and safety issues regarding third party contractor operations are governed by project specific contracts and are not covered by this standard.

2. Purpose and Scope

This procedure provides guidelines on the pre-evaluation of subcontractor safety programs. It also provides guidance on contractual risk management, subcontractor safety performance on the job site, and the responsibilities of the Project Manager with respect to subcontractor jobsite safety performance.

It is recommended that each URS Corporation subcontractor be evaluated at least annually using Attachment 46-1, "Subcontractor Safety Evaluation Form," in order to perform work on any new URS Corporation projects.

3. Implementation

Field Activities - Implementation of this procedure is the responsibility of the Project Manager.

4. Guidelines

A. Pre qualification of Subcontractor - The Project Manager shall complete the following procedures for all subcontractors retained on projects covered by this standard (the PM should also require subcontractors to follow these procedures with respect to pre-qualification of sub-subcontractors of any tier):

1. Request all subcontractor candidates to complete the attached "Subcontractor Health and Safety Evaluation Form" (Attachment 46-1).
2. Conduct an assessment of each subcontractor's qualifications with respect to the subcontractor health and safety evaluation criteria contained in Attachment 46-2.

URS SAFETY MANAGEMENT STANDARD

Subcontractor Health and Safety Requirements

3. Verify that subcontractors meet the insurance requirements as stated in Attachment 46-2 or as approved by Counsel.
4. If the subcontractor has been successfully evaluated within the last 12 months, that evaluation may be substituted.
5. For long term projects, this evaluation should be updated within 12 months of the previous evaluation.

B. Contractual and Risk Management Requirements of Subcontractors

1. Ensure that subcontractor is contractually bound to comply with applicable client and URS Corporation Health and Safety Program requirements.
2. Ensure that subcontractor is contractually bound to develop *additional safety procedures for work that is exclusive to their activities on the site and for which they may have superior knowledge.*
3. Assess compliance of subcontractor's insurance with the URS Corporation subcontract requirements (including, but not limited to, necessary types and amounts of coverage, URS Corporation additional insured endorsement, etc.).
4. Ensure that URS Corporation has the right in its subcontract, without liability to the subcontractor, to stop the subcontractor's work in the event of any violations of the applicable Health & Safety Plan.

C. Subcontractor Safety Representative

1. Require each subcontractor to appoint a Subcontractor Safety Representative (SSR) who:
 - a. Is knowledgeable of the subcontractor's activities.
 - b. Understands the safety requirements of the subcontractor's activities.
 - c. Has the ability to recognize and the authority to correct safety deficiencies and execute a stop work order should an imminent danger arise.

URS SAFETY MANAGEMENT STANDARD

Subcontractor Health and Safety Requirements

- d. Has the responsibility for the administration of the subcontractor Health and Safety Program.
- e. Will serve as the direct contact with URS Corporation regarding resolution of Health and Safety issues.

D. Communication

1. Provide the SSR with information regarding Site Safety Program including but not limited to:
 - a. Client Requirements.
 - b. URS Corporation Site Safety Program.
 - c. Site Hazard Communication Program.
 - d. Site Emergency Action Plan.
 - e. Any additional safety information from other contractors or subcontractors working on the site.
2. Provide SSR with name of URS Corporation project contact and alternate for addressing site Health and Safety issues.
3. Require the participation of subcontractors in all Site Safety Briefings.
4. Require subcontractor compliance with all safety directives and/or stop work orders issued by the URS Corporation site representatives.

E. Subcontractor Safety Performance

1. To the extent reasonable in light of URS Corporation's scope of work under the client contract, visit the site and periodically observe subcontractors operations (i.e., conduct spot checks) to assess whether subcontractor appears to be conducting its operations in accordance with applicable health and safety requirements. Periodically review any required subcontractor health and safety written documentation for compliance with applicable requirements.
2. In the event that deficiencies are observed immediately bring them to the attention of the SSR for resolution.

URS SAFETY MANAGEMENT STANDARD

Subcontractor Health and Safety Requirements

3. In the event of observation of an "Imminent Danger" situation (i.e. involving a situation that could result serious injury or death), immediately contact the SSR and stop the work.
4. Investigate all injuries/illnesses related to subcontractor operations to identify causes and effect corrective actions.
5. In the event of serious and/or continuing subcontractor breaches of applicable health and safety requirements contact legal counsel to assess whether formal contractual action is appropriate under the subcontract.

5. Documentation Summary

A. File in the Project Safety File

1. Subcontractor Health and Safety Evaluation Form.
2. Applicable and current Insurance Certificates.
3. Names and telephone numbers of SSR for each subcontractor.
4. Verification of Health and Safety documents transmitted to subcontractors and received from subcontractors.
5. Identified safety deficiencies as applicable for subcontractors and verification of correction of conditions.
6. All other safety related documentation between URS Corporation and subcontractor such as training certifications, etc.
7. Subcontractor safety plan, incident reports and resolution reports.

6. Resources

- A. Federal OSHA Workplace Injury and Illness statistics
(<http://www.osha.gov/oshstats/work.html>)
- B. Managing Subcontractor Safety, Prepared by The Construction Industry Institute, Safety Task Force, Publication 13-1, The University of Texas at Austin, Austin, Texas, 1991 (<http://www.construction-institute.org/>)
- C. American National Standard Construction and Demolition Operations -- Safety and Health Program Requirements for Multi-Employer Projects,

URS SAFETY MANAGEMENT STANDARD

Subcontractor Health and Safety Requirements

ANSI A10.33-1992, National Safety Council, Itasca, Illinois 60143-3201
(<http://www.nsc.org>)

- D. "Liability, OSHA and the Safety of Outside Contractors," Professional Safety, American Society of Safety Engineers, January 1993
(<http://www.asse.org>)
- E. "Proactive Construction Management; Dealing With the Problem of Subcontractor Safety," Professional Safety, American Society of Safety Engineers, January 1990 (<http://www.asse.org>)
- F. "Design Professional Liability Under OSHA," Presented by Thomas F. Holt, Jr., HWAC Lawyer's Roundtable, June 14, 1995 (to be Published)
(<http://www.hwac.org>)
- G. "Occupational Injury and Illness Rates by SIC", Bureau of Labor Statistics, U. S. Department of Labor (<http://stats.bls.gov/sahome.html>)
- H. Attachment 46-1 - Subcontractor Safety Evaluation Form
- I. Attachment 46-2 - Subcontractor Evaluation Criteria



Health and Safety Program
**SUBCONTRACTOR SAFETY
EVALUATION FORM**

Attachment 46-1

It is the policy of URS to provide a safe and healthful environment for all of its employees through the prevention of occupational injuries and illnesses. As such, URS considers safety as paramount and requests the following information of all subcontractors.

Company Name	
Company Address	
Submitted By	
Title	
Phone	
Fax	
Type of services performed	
Standard Industrial Classification (SIC) Code	
Number of employees in company	
Date of submittal	

SAFETY PERFORMANCE DATA

1. Has your company performed work as a subcontractor to URS previously? ☐ Yes ☐ No

If yes, explain the nature of the work, project location and project date, URS Project Manager and telephone number.

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Health and Safety Program
**SUBCONTRACTOR SAFETY
EVALUATION FORM**

Attachment 46-1

5. Has your company received any Willful violations? ☐ Yes ☐ No
6. Does your company maintain a written Health and Safety program?
If yes please include a copy of the Table of Contents. ☐ Yes ☐ No
7. Does your firm have a safety officer? ☐ Yes ☐ No
If yes, please provide name and telephone number

Name

Telephone

8. Is your company capable of preparing safety procedures specific to the work proposed for this project? ☐ Yes ☐ No

RISK MANAGEMENT / INSURANCE DATA

1. Does your firm have insurance coverage for commercial liability and automobile liability without limits of at least \$1,000,000?
(Note that certain URS client contracts require insurance in excess of the levels noted above. Inability to supply insurance at levels required by URS' client contract could result in disqualification.) ☐ Yes ☐ No
2. Are you able to provide URS with insurance certificates naming URS and if requested, URS' client as an additional insured? ☐ Yes ☐ No
3. Please provide proof of current Worker's Compensation and Employers Liability Insurance coverage (attach certificate).



Health and Safety Program
**SUBCONTRACTOR SAFETY
EVALUATION FORM**

Attachment 46-1

VERIFICATION OF DATA

Please have an officer of the Company sign below certifying that the information provided in this document is current and correct.

Name

Title

Signature _____

Date _____

Misrepresentation of data requested is grounds for immediate termination of contracts and disqualification from future consideration.

URS Use Only

Date Received: _____

Evaluated by: _____
Project Manager

Referrals only required as per Attachment 2

- ☐ Submitted to Health and Safety Rep for evaluation: H&S Rep _____
- ☐ Pass
- ☐ Fail
- ☐ Submitted to Counsel for evaluation: Counsel _____
- ☐ Pass
- ☐ Fail

Final Evaluation

- ☐ Pass
- ☐ Fail

Project Manager: _____

Signature: _____

Date: _____



SUBCONTRACTOR EVALUATION CRITERIA

Prior to engaging a subcontractor on a project, Project Managers are strongly recommended to ensure that the contractor has an effective safety program, is capable of conducting its operations in a safe manner and has appropriate insurance coverage. The following guidelines shall be followed in determining whether the subcontractor may be used on a URS Corporation project.

GENERAL INFORMATION

The contractor must be able to complete the header section on Page 1 of the questionnaire including their Standard Industrial Classification. For assistance determining the SIC for a business refer to the Standard Industrial Classification Manual online at <http://www.osha.gov/oshstats/sicser.html>.

SAFETY PERFORMANCE DATA RESPONSES

The numbers in this section directly correspond to the questions in Attachment 46-1.

1. If yes, check safety performance history with previous URS Corporation Project Manager if unknown.
2. For any EMR listed as greater than 1.0 the contractor has failed the evaluation. Further consideration may not occur without referral to URS Corporation Health and Safety Program Professional in your Region for further assessment.

If all EMRs listed are 1.0 or below, continue with evaluation.

3. Determine the most recent OSHA Incident Rate and Lost Workday Case Rate for the subcontractors SIC. This may be done online at <http://www.osha.gov/oshstats/work.html>.

For rates in excess of the published averages the subcontractor has failed the evaluation. Further consideration may not occur without referral to URS Corporation Health and Safety Program Professional in your Region for further assessment.

If the rates are at or below the average for the subcontractors SIC, continue with the assessment.

4. Determine the subcontractor's citation history at <http://www.osha.gov/cgi-bin/est/est1>. Compare the published data to the contractor questionnaire. The subcontractor must explain any discrepancies.

Look for large numbers of serious and repeat violations. If the suggests a problem request information and refer to URS Corporation Health and Safety Program Professional in your Region for further assessment.



**SUBCONTRACTOR
EVALUATION CRITERIA**

5. If subcontractor answers yes to willful violations request a detailed explanation and refer to URS Corporation Health and Safety Program Professional in your Region for further assessment.
6. For small subcontractors a no answer is not unexpected and may be acceptable with good EMR and OSHA statistics. Generally some minimal program is expected depending on the breadth and complexity of the work. Contact URS Corporation Health and Safety Program Professional in your Region for further assessment if you have any questions or doubts.
7. See 6.
8. It is expected that a subcontractor being hired to perform services on the project site should be the best prepared to address safety issues for their operations, especially when specialty work is being conducted or for work in which the subcontractor possesses superior knowledge of their operations.

A 'no' answer should be referred to the URS Corporation Health and Safety Program Professional in your Region for further assessment.

RISK MANAGEMENT/INSURANCE DATA

1. The inability to provide insurance coverage at or above \$1,000,000 requires referral to Counsel.
2. *Proof of Workers Compensation Insurance is required. Refer any questions to Counsel.*
3. Ability to provide Insurance Certificates naming URS Corporation as an additional insured is required. Refer any questions to Counsel.

URS SAFETY MANAGEMENT STANDARD

DOT Shipping

1. Applicability

Office and field operations that ship hazardous materials (HazMat) must follow this Hazardous Material Shipping Program.

Hazardous materials may include, but are not limited to, compressed gases, laboratory reagents, field samples, hazardous wastes, and materials used for bench scale and pilot plant operations.

2. Purpose and Scope

This program was designed to provide a framework for compliance with the requirements of the U.S. Department of Transportation (DOT) 49 CFR and the International Air Transportation Association (IATA) for shipping hazardous materials by land or air.

3. Implementation

Office Locations - The Office Manager is responsible for implementing this program at company locations/facilities.

Field Activities - The Project Manager is responsible for compliance and implementation of this program at project sites.

4. Requirements

A. Staffing

Each project or location must ensure that awareness and function specific trained individuals are involved in the process of preparing hazardous materials for shipment.

Each location where HazMat shipping occurs or where HazMat employees are assigned must identify a local or regional Shipping Specialist.

B. General Procedures

1. Select the best way to ship the HazMat item based on the quantity, hazard(s), and mode of transportation (e.g., air, land, water).
2. Ensure package contents are compatible.
3. Package, mark, and label according to applicable regulations.

URS SAFETY MANAGEMENT STANDARD

DOT Shipping

4. Complete the bill of lading or shipper's declaration for dangerous goods according to applicable regulations.
5. Follow hazard communication requirements:
 - a. Send a copy of the appropriate Emergency Response Guidebook page or material safety data sheet (MSDS) with each shipment.
 - b. Include the 24-hour emergency response phone number (CHEMTREC 800-424-9300 domestic, 703-527-3887 international) on the shipping paperwork.

C. Placarding Requirements

1. Placards must be offered to drivers if the amount of hazardous materials being shipped exceeds 1,000 pounds.
2. For extremely hazardous materials (e.g., severe explosives and toxics), any amount requires placarding.
3. "Limited quantities" are excepted from placarding.
4. URS employees transporting hazardous materials meeting DOT tracking and shipping requirements will obtain the proper Commercial Drivers License and endorsement.

D. Training

1. Require employees who package, prepare paperwork, load and/or unload, and transport hazardous materials be trained to the appropriate level of activity:
 - a. Training is required prior to performing HazMat shipping activities.
 - b. Training is required when regulatory changes impact current procedures and every 2 years.
 - c. General awareness training is required for everyone who is involved in HazMat shipping. This training includes:
 1. Recognizing hazardous materials
 2. Penalties for not complying

URS SAFETY MANAGEMENT STANDARD

DOT Shipping

3. Basic regulatory requirements

- d. Function specific training is required to ensure employees can perform the specific HazMat jobs safely and in compliance with applicable regulations.
- e. Driver's may be exempt from function specific training if the DOT's Materials of Trade (MOT) exception applies to the shipment. (See Attachment 48-1 for information on this exception).

E. Special Requirements

- 1. Some countries and transporters have more stringent requirements than DOT or IATA. For example, the United Parcel Service (UPS) publishes its own Guide for Shipping Ground and Air Hazardous Materials. URS shipping training and this program may not meet these additional requirements.
- 2. Contact the applicable shipping company or a URS Health and Safety Program Representative if you are unsure or suspect there may be additional, special requirements on a shipment.
- 3. For international shipments an expediter may be required to ensure needed materials are not held in customs. It may be advisable to purchase hazardous materials once you arrive in your destination country.

5. Documentation

All files must be kept in a central location.

A. Training records

- 1. Sign-up sheet with list of employee names, date, management certification.
- 2. Successfully completed tests.
- 3. Outline of course materials.

6. Resources

URS SAFETY MANAGEMENT STANDARD
DOT Shipping

- A. 49 Code of Federal Regulations, Parts 171-180, Subchapter C--
Hazardous Materials Regulations.
- B. Dangerous Goods Regulations. International Air Transport Association.
40th Edition. Effective January 1, 1999.
- C. International Maritime Dangerous Goods Code. International Maritime
Organization, Amendment 29-98.
- D. DOT Office of Hazardous Materials Safety
- E. URS HazMat Shipping Support Helpline 800.381.0664
- F. Attachment 48-1 - Materials of Trade Summary



Health and Safety Program
**MATERIALS OF TRADE (MOTs)
SUMMARY**

Attachment 48-1

The Department of Transportation (DOT) adopted the "Materials of Trade" or "MOTs" exception for companies that are not in the business of transporting chemicals. Because URS is in the business of environmental sampling and other field services, URS is able to use this exception. The exception is found in the Code of Federal Regulations: 49 CFR 173.6.

The MOTs exception allows URS Corporation employees to transport certain amounts of chemicals aboard their vehicles without preparing hazardous material paperwork or packaging the hazardous material in specification boxes using hazard labels and required markings.

MOTs must be packaged in the manufacturer's original packaging, or a packaging of equal or greater strength or integrity. Gases must be in DOT specification cylinders. If the inner container (such as the bottle) is secured against movement inside the vehicle (if it is kept in a cabinet or tool box), then no outer packaging (such as a cardboard box) is required. The MOT must be marked with a common name or the technical name.

No hazardous material training is required, except that the driver must be familiar with the MOTs exception. The driver is not allowed to exceed total aggregate weight of 440 pounds of MOTs aboard the vehicle.

The hazardous material classes and quantities of HAZMAT items typically transported by URS field can be transported as MOTs:

- The inner container of a Packing Group II and III material in Class 3, 8, 9, Division 4.1, 5.1, 5.2, 6.1, or ORM-D cannot exceed 66 pounds or 8 gallons each.
- A Division 2.1 or 2.2 cylinder cannot exceed 220 pounds.
- The inner container of a Packing Group II or II material in Division 4.3 cannot exceed 1 ounce.

Be careful not to exceed the 440-pound upper limit weight restriction.

URS SAFETY MANAGEMENT STANDARD

Injury / Illness / Incident Reporting

1. Applicability

This procedure applies to URS Corporation offices and field operations.

2. Purpose and Scope

The purpose of this procedure is to provide guidance for the timely reporting of work related injuries, illness, and incidents.

3. Implementation

Office Locations - Implementation of this program is the responsibility of the employee's Supervisor.

Field Activities - Implementation of this program is the responsibility of the Project Manager.

4. Requirements

A. Reporting: All employees shall immediately notify their appropriate level of management (line, project, and/or office) of a reportable incident. A reportable incident includes the following:

1. An injury to any URS employee, subcontractor, client representative, or private citizen, even if the injury does not require medical attention;
2. An injury to a member of the public occurring on a URS work site or possibly resulting from a URS or subcontractor activity or involving URS or subcontractor property, equipment, or resource;
3. Illness resulting from suspected chemical exposure;
4. Chronic or re-occurring conditions such as back pain or cumulative trauma disorders (example: carpal tunnel syndrome);
5. Fire, explosion, or flash;
6. Any vehicle accidents occurring on site, while traveling to or from client locations, or with any company-owned or leased vehicle;
7. Property damage resulting from any URS or subcontractor activity;
8. Structural collapse or potential structural hazards;

URS SAFETY MANAGEMENT STANDARD

Injury / Illness / Incident Reporting

9. Unexpected release or imminent release of a hazardous material;
10. Unexpected chemical exposures to workers or the public;
11. A safety related complaint from the public regarding URS activities.
12. Any other significant occurrence that could impact safety.

B. Actions: *The following actions will be taken following a reportable incident:*

1. Employees:

- a. If necessary, suspend operations and secure and/or evacuate the area;
- b. Immediately notify your supervisor and/or project manager
- c. Record information pertaining to the incident (e.g., time, date, location, name and company of person(s) involved, description of event, and actions taken);
- d. Assist with incident investigation as directed by management;
- e. Implement corrective actions as directed by management;
- f. *Do not* discuss the incident with members of the news media or legal representatives (except URS legal counsel or your personal legal advisor) unless directed to do so by URS management;
- g. *Do not* make statements pertaining to guilt, fault, or liability.

2. Line/Project Management:

- a. Review circumstances of the incident with applicable employee(s);
- b. Notify local Health and Safety representative. If incident involves and an injury/illness of a URS employee, also notify the local Human Resources Representative;
- c. Complete and distribute injury/incident report within 24 hours. (Note: If the employee is unable to complete the

URS SAFETY MANAGEMENT STANDARD

Injury / Illness / Incident Reporting

report, another company employee, line manager, project manager, or local health and safety representative may complete the report.);

- d. Review and verify that necessary corrective actions are identified and implemented;
- e. Discuss with department or project staff the circumstances surrounding the incident and corrective actions taken.

3. Local Health And Safety Representative

- a. Assist with incident evaluation;
- b. With management, identify cause(s) of incident and identify corrective actions needed to avoid recurrence;
- c. Review injury/incident report for completeness and accuracy;

4. Local Human Resources Representative

- a. Report work-related injuries and illness to worker compensation carrier

(St. Paul Fire and Marine @ 1-800-787-2851);

5. Documentation Summary

A. File these records in the Office Safety File:

- 1. Attachment 49-1 - Incident Report Form
- 2. Maintain OSHA 200 Log.

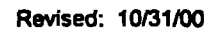
B. File these records in the Project Health and Safety File

- 1. Attachment 49-1 - Incident Report Form
- 2. Maintain OSHA 200 Log if applicable for Project.

6. Resources

A. U. S. OSHA

B. Attachment 49-1 - Incident Report Form



URS SAFETY MANAGEMENT STANDARD

Bloodborne Pathogens

1. Applicability

This program applies to all employees who may incur exposure to blood or other potentially infectious body fluids as a result of performing their assigned job duties. Examples include: designated first aid responders or work assignment at a client's medical laboratory site. Note: Sewage work does not typically involve exposure to bloodborne pathogens even though other biological hazards may be present.

2. Purpose and Scope

The purpose of this program is to identify jobs and tasks where occupational exposure to bloodborne pathogens (i.e. Human Immunodeficiency Virus, Hepatitis B and C Viruses, and others) may occur and to implement controls which will eliminate or significantly reduce the risk of infectious bloodborne diseases in accordance with the OSHA Bloodborne Pathogen Standard (29 CFR 1910.1030). This program also includes provisions for affected employees to receive personal protective equipment, Hepatitis B vaccinations, training, and if necessary, confidential medical evaluations and follow up.

3. Implementation

Office/Laboratory Locations – Implementation is the responsibility of the Operations Manager.

Field Activities – Implementation is the responsibility of the Project Manager.

Program Administration – The Occupational Health Specialist (OHS) and URS Health & Safety Director are responsible for implementation and annual evaluation of the Exposure Control Plan (ECP) – Attachment 51-1. The OHS will ensure that all medical actions required are performed and that the appropriate employee health and OSHA records are maintained. The URS Health & Safety Director will oversee provisions of necessary personal protective equipment and supplies, training, documentation of training, and will make the written ECP available to employees and OSHA representatives.

4. Requirements

A. Risk Identification

1. The Project Manager, with assistance from the site Health & Safety Representative, will perform an exposure determination concerning

URS SAFETY MANAGEMENT STANDARD

Bloodborne Pathogens

which employee may or may not have exposure to bloodborne pathogens. Employees will be classified into two categories:

- a. Employees formally designated as part of their job to perform tasks that may involve direct contact with blood or potentially infectious body fluids.
 - i. Requires initial and annual training
 - ii. Hepatitis B vaccination series will be offered
 - iii. Requires procedures be followed in ECP
 - b. Employees not assigned to jobs or tasks that involve exposure to blood or potentially infectious body fluids, but who could in extraordinary situations, voluntarily assist injured or ill individuals, and therefore could have exposure to bloodborne pathogens.
 - i. Requires post-exposure procedures outlined in ECP
2. The ECP will be reviewed and updated at least annually, and whenever necessary to include new or modified tasks and procedures.

B. Exposure Control Methods

1. All employees will utilize universal precautions – an approach to infection control where all human blood and body fluids are treated as potentially infectious.
2. Engineering and work practice controls (e.g. sharps disposal containers, perform procedures to prevent splashing) will be used to eliminate or minimize exposure to employees.
3. Personal protective equipment (e.g. disposable gloves, face masks with eye protection, liquid impermeable gowns, CPR pocket masks) will be provided and used in order to place a barrier between the employee and the blood or body fluids.
4. Hands are to be washed immediately with soap and water after removing gloves or performing any work with blood or body fluids.

URS SAFETY MANAGEMENT STANDARD

Bloodborne Pathogens

5. Housekeeping and decontamination of work surfaces with EPA-registered germicides or a bleach solution diluted 1:10 with water, will be performed as needed to maintain a safe working environment.
 6. Regulated biohazardous waste (contaminated sharps or items that are capable of releasing blood or body fluids through employee handling) will be disposed of in special waste receptacles lined with red bags and incinerated per federal and state regulations. This does not include small amounts of waste from a minor wound which can be sealed in a plastic bag and disposed of in regular trash.
- C. Hepatitis B Vaccination series will be made available to all employees who have been designated to perform tasks that involve direct exposure to bloodborne pathogens. Further, this vaccination series will be made immediately available to employees that have had an occupational bloodborne exposure incident, whether as a result of their assigned tasks or occurring as a result of incidental contact.
- D. In the event that an employee is exposed to blood or body fluids, they should immediately flush the affected area with copious amounts of water. A confidential medical evaluation and follow-up with an occupational physician should be arranged for the employee as soon as possible following the report of an exposure incident, preferably within 1-2 hours after the exposure incident has occurred.
- E. Hazard Communication
1. Orange-red biohazard warning labels will be used to identify lab areas or disposal containers with blood or other potentially infectious materials present.
 2. Initial and annual training classes will be conducted by the Division Health & Safety Managers for all employees assigned to tasks where occupational exposure may occur.
- F. Exposure Incident Investigation

The OHS and Division Health & Safety Manager will review the circumstances of each exposure incident to determine if the appropriate work procedures were being followed at the time of the incident and to assess and implement any necessary corrective actions, including changes required in the ECP.

URS SAFETY MANAGEMENT STANDARD

Bloodborne Pathogens

5. Documentation Summary

- A. Distribute Medical Surveillance Evaluation form to Medical Services Provider, site Health & Safety Representative, and Supervisor.
- B. Post-exposure medical records from consulting physician and exposure incident reports will be retained in employee's confidential medical record.
- C. Send initial and annual training records to the Division Health & Safety Manager.
- D. Regulated infectious medical waste manifest records will be stored by the site Health & Safety Representative.

6. Resources

- A. U.S. OSHA 29 CFR 1910.1030 Occupational Exposure to Bloodborne Pathogens Standard, current revision.
(http://www.osha-slc.gov/OshStd_data/1910_1030.html)
- B. Centers for Disease Control Morbidity and Mortality Weekly Report: "Public Health Service Guidelines for the Management of Health-Care Worker Exposure to HIV and Recommendations for Post-exposure Prophylaxis" May 15, 1998; Vol. 47, No. RR-7.
(<http://www.cdc.gov/epo/mmwr/preview/mmwrhtml/00052722.htm>)
- C. Centers for Disease Control Morbidity and Mortality Weekly Report: "Immunization of Health-Care Workers: Recommendations" December 26, 1997; Vol. 46, No. RR-18.
(<http://www.cdc.gov/epo/mmwr/preview/mmwrhtml/00050577.htm>)
- D. Centers for Disease Control Morbidity and Mortality Weekly Report: "Recommendations for Prevention and Control of Hepatitis C Virus (HCV) Infection and HCV-Related Chronic Disease" October 16, 1998; Vol. 47, No. RR-19.
(<http://www.cdc.gov/epo/mmwr/preview/mmwrhtml/00055154.htm>)
- E. Bloodborne pathogens standard and the construction industry (OSHA letter of interpretation 01-26-93)
(http://www.osha-slc.gov/OshDoc/Interp_data/l19930420A.html)
- F. Clarification on first aid requirements for hazardous waste sites (OSHA letter of interpretation 04-20-93)

URS SAFETY MANAGEMENT STANDARD

Bloodborne Pathogens

(http://www.osha-slc.gov/OshDoc/Interp_data/I19930420A.html)

- G. Worksafe Australia: National Occupational Health & Safety Commission. National Code of Practice for health care workers and other people at risk of the transmission of Human Immunodeficiency Virus and Hepatitis B in the workplace. [NOHSC: 2010(1993)]
(http://www.worksafe.gov.au/publications/fulltext/codes/nohsc2010_toc.htm)

**BLOODBORNE PATHOGENS
EXPOSURE CONTROL PLAN****1. INTRODUCTION**

Employees are at risk for exposure to and possible transmission of infectious diseases each time they are in contact with blood or body fluids. Bloodborne pathogens are microorganisms present in human blood and other body fluids that can cause serious disease in humans and include, but are not limited to Hepatitis B Virus (HBV), Hepatitis C Virus (HCV), and Human Immunodeficiency Virus (HIV).

Therefore, this exposure control plan (ECP) has been established to ensure that employees are effectively informed concerning potential workplace health hazards and that protective measures necessary to eliminate or minimize bloodborne exposure incidents are utilized whenever possible.

2. EXPOSURE DETERMINATION

The Medical Surveillance Evaluation form will be used to evaluate which employees may incur occupational exposure to blood or other potentially infectious materials when performing routine tasks and procedures. These exposure determinations will be made without regard to the use of personal protective equipment and regardless of exposure frequency.

The employees in the following job classifications may have occupational exposure to bloodborne pathogens and are covered by this program:

- Occupational health nurse
- Designated first aid providers
- Medical laboratory employees

Tasks and procedures which may expose employees to bloodborne pathogens include:

- Treating cuts, abrasions, and burns
- Cleaning contaminated environmental surfaces
- Administering cardiopulmonary resuscitation (CPR)
- Collecting samples at municipal waste sites or sewage lagoons
- Environmental sewer samplers or sewer construction workers
- Construction of residential sewer lines

3. EXPOSURE CONTROL

- A. "Universal precautions" are a required method of control to prevent exposure to blood and body fluids. This term refers to the concept that all human blood

**BLOODBORNE PATHOGENS
EXPOSURE CONTROL PLAN**

and certain human body fluids are treated as if known to be infectious for HIV, HBV, HCV, and other bloodborne pathogens, regardless of the perceived risk status of another individual. Universal precautions apply to blood, other body fluids containing visible blood, semen, and vaginal fluids. Universal precautions do not apply to feces, nasal secretions, saliva, sweat, tears, sputum, urine, and vomitus unless they contain visible blood. Although these fluids have an extremely low or nonexistent risk for bloodborne pathogens, they are a potential source for other infectious diseases and precautions should also be followed when these body fluids are present.

B. Engineering and Work Practice Controls

The following engineering controls shall be in place in all areas of occupational exposure:

1. Accessible handwashing facilities. If soap and running water are not available, an antiseptic hand cleaner in conjunction with clean paper towels or antiseptic towelettes are acceptable temporary alternatives to running water. When this alternative method is used, employees must wash their hands with soap and running water as soon as feasible.
2. Containers for disposable contaminated sharps will be puncture resistance, labeled a biohazard, leakproof, and have a closable top.
3. Containers for storage, transport, or shipment of blood or other potentially infectious materials, regulated waste, and contaminated laundry will be labeled with the biohazard symbol, site address, and have a securely closing lid.

The following work practice controls must be strictly followed to minimize exposure and isolate or remove bloodborne pathogens from the workplace:

4. Personal protective equipment will be provided at no cost to the employee will be chosen based on the anticipated exposure to blood. PPE is considered appropriate if it does not permit blood or other potentially infectious materials to reach or pass through clothes, skin, or mucous membranes of the eyes or mouth under normal conditions of use and for the duration of time the equipment will be used. PPE must be readily accessible and will be removed prior to leaving the work area.
 - a. Disposable, single use gloves shall be used as a protective barrier in all situations in which contact with body fluids is anticipated. Gloves of the correct size will be provided. Disposable gloves will not be washed or disinfected for reuse and will be replaced between employees and if they become

**BLOODBORNE PATHOGENS
EXPOSURE CONTROL PLAN**

torn or punctured. Gloves are especially important if the employee has cuts, abraded skin, chapped hands, or dermatitis.

- b. Liquid impermeable gowns, boots, and masks, in combination with eye protective devices such as goggles and shatterproof glasses with solid-side shields or chin-length face shields, shall be worn whenever splashing, spraying, or spattering of blood droplets or body fluids can be reasonably anticipated.
- c. Disposable pocket mask ventilation devices should be provided in all first aid kits and used to avoid mouth-to-mouth contact during emergency cardiopulmonary resuscitation.

Examples of Recommended PPE (depending on task, more PPE may be needed).

<u>Task</u>	<u>Gloves</u>	<u>Gown</u>	<u>Mask</u>	<u>Goggles</u>	<u>Boots</u>
Bleeding control w/ minimal bleeding	Yes	No	No	No	No
Bleeding control w /spurting blood	Yes	Yes	Yes	Yes	No
Cardiopulmonary resuscitation	No	No	Yes	No	No
Decontamination/clean-up	Yes	No	No	No	No
Collection of sewage waste	Yes	No	No	Yes	Yes
Construction of sewage lines	Yes	No	No	Yes	Yes
Medical laboratory activities	Yes	Yes	Yes	Yes	No

- 5. Eating, drinking, smoking, applying cosmetics, and handling of contact lenses are prohibited in work areas where there is a reasonable likelihood of occupational exposure. Food and drink will not be kept in refrigerators, freezers, shelves, cabinets, or on counter tops where blood or body fluids are present.
- 6. Contaminated needles and other sharps will not be bent or recapped unless a one-handed technique is used. They will be disposed of in an appropriate sharps container.
- 7. All regulated, biohazardous waste will be placed in a waste receptacle that has designated red biohazard bags and a closable top controlled by a foot peddle. When full, the bags shall be removed with gloved hands, tied off, and placed in a biohazard shipping carton, to be held for pick-up. If any biohazard bag appears to be leaking, it must be double-bagged. The waste will be incinerated per federal and state regulations.

C. Housekeeping



BLOODBORNE PATHOGENS EXPOSURE CONTROL PLAN

1. Universal precautions will be used when cleaning or decontaminating any surface or equipment that may be contaminated. Appropriate PPE will be used for protection during decontamination.
2. All contaminated environmental work surfaces such as countertops or floors will be cleaned with a household bleach solution diluted 1:10 with water directly following contamination with blood or body fluids.
3. Instruments such as tweezers, bandage scissors, and thermometers will be disposable rather than reusable equipment and will be disposed of in an appropriate manner.
4. Broken, contaminated glassware will not be picked up directly with the hands. It will be cleaned up using a mechanical means such as a brush and dustpan or tongs.

4. HEPATITIS B VACCINATION

Within 10 working days of placement, all employees assigned to tasks with potential occupational exposure to bloodborne pathogens will be offered the Hepatitis B vaccination at no cost to the employee, unless the employee has had a previous Hepatitis B vaccination series, antibody testing reveals the employee is immune or the vaccine is contraindicated for medical reasons. Further, this vaccination series will be made immediately available to employees who have an occupational exposure whether as a result of their assigned tasks or occurring from an incidental contact.

The local occupational medical facility used for routine medical surveillance will administer the vaccinations.

Employees who decline the Hepatitis B vaccine will sign a copy of the waiver form located at the end of this attachment. The signed waiver will be stored in the employee's medical record with the Occupational Health Specialist. Employees may initially decline the vaccination, but at a later date, while still covered under this plan, may then decide to take them. The vaccinations will be made available to the employee at that time.

Employees choosing to take the vaccination series will sign a consent form at the occupational clinic prior to receiving the injections and are advised to read the package insert regarding the efficacy, safety, method of administration, and benefits of the vaccine. Employees may also ask questions directly of the Medical Service Provider or local occupational physician. Employees are not required to participate in a prescreening program (to determine immunity) before receiving the vaccinations. If a routine booster of Hepatitis B vaccine is recommended by the U.S. Public Health Service at a future date, such booster dose(s) will be made available to affected employees.

**BLOODBORNE PATHOGENS
EXPOSURE CONTROL PLAN****5. POST-EXPOSURE INCIDENT EVALUATION AND FOLLOW-UP**

All occupational bloodborne pathogen exposures are to be reported to a Health & Safety Representative or the Occupational Health Specialist immediately after initial decontamination first aid is accomplished. Following the report of an exposure incident, a confidential medical evaluation with an occupational physician will be arranged as soon as possible, ideally no later than 1-2 hours after the incident has occurred. In some states, depending on applicable workers' compensation law, employees may choose treatment from their personal physician. A copy of the Bloodborne Pathogen Standard will be provided if the physician does not have a copy. A written URS Incident Report will be completed as soon as possible, fully describing the incident.

A. First aid protocol for treatment immediately after an exposure incident:

1. Lacerations, punctures, and abrasions should be washed under cool running water for at least 5 minutes allowing free bleeding. Cleanse area well with soap or iodine solution. Apply sterile dressing as needed. Give tetanus booster if indicated (7-10 years since last booster).
2. Ocular exposure requires irrigation of the eye with water or sterile normal saline solution for 15 minutes.
3. Mucous membrane exposure requires rinsing mouth with ½ strength 3% hydrogen peroxide for 30 seconds, four separate and consecutive times.

B. Confidential Medical Evaluation

1. The treating occupational physician will receive documentation of the routes of exposure, the circumstances surrounding the incident, and identification of the source individual (the individual the employee was exposed to). The blood of the source individual will be tested if possible and after consent is obtained. When legally permissible, results of testing of the source individual will be made available to the exposed employee with the exposed employee informed about the applicable laws and regulations concerning the disclosure of the identity and infectivity of the source individual.
2. Testing of the exposed employee's blood, if consented to (the employee may consent to baseline blood collection, but may request that the sample not be tested for HIV for up to 90 days, if at all), is recommended.

**BLOODBORNE PATHOGENS
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3. Post-exposure medical treatment will be offered in accordance with the current recommendations of the U.S. Public Health Services. This may include, but is not limited to:

- a. A series of HIV post-exposure blood tests
- b. Hepatitis B vaccination and/or Hepatitis B immune globulin
- c. HIV post-exposure prophylactic medications
- d. Evaluation of acute febrile illnesses following exposure
- e. Employee counseling concerning precautions to take during the period after the exposure incident and information on signs and symptoms of potential illnesses.

C. Healthcare Professional's Written Opinion

The Occupational Health Specialist will obtain and provide the employee with a copy of the evaluating physician's written opinion within 15 days of the completion of the medical evaluation. A copy will be maintained in the employee's confidential medical record. The written opinion will be in accordance with the requirements of the Bloodborne Pathogens Standard indicating that the employee has been informed of any medical conditions resulting from exposure that require further evaluation or treatment. All other findings or diagnoses will remain confidential and will not be included in the report.

6. HAZARD COMMUNICATION

- A. Fluorescent red or orange-red warning labels bearing the universal biohazard symbol and the legend BIOHAZARD must be firmly affixed to all containers (e.g. waste cans, sharps containers, and refrigerators) used for the storage or shipment of blood or other potentially infectious materials.
- B. All employees designated to perform tasks involving occupational exposure shall receive bloodborne pathogens training at the time of initial assignment to the job. This training will be given during working hours and at no cost to employees. Refresher courses will be provided annually and if new tasks or procedures are implemented. Material appropriate in content and vocabulary to education level, literacy, and language of the employees shall be used for all required training. The Division Health & Safety Representatives will be the qualified instructors for the training classes.

Training will include: making accessible a copy of the regulatory text of the standard and explanation of its contents, general discussion on bloodborne diseases and their transmission, exposure control plan, engineering and work



BLOODBORNE PATHOGENS EXPOSURE CONTROL PLAN

practice controls, personal protective equipment, hepatitis B vaccine, response to emergencies involving blood, how to handle exposure incidents, the post-exposure evaluation and follow-up program, signs/labels/color-coding, and question and answer time with the trainer.

7. EXPOSURE INCIDENT INVESTIGATION

The site Health & Safety Representative will review the circumstances of any exposure incident to determine corrective actions. The incident report will include:

- A. Engineering controls in use at the time
- B. Work practices followed
- C. A description of any equipment being used
- D. A description of the work being performed
- E. PPE that was used at the time of the incident
- F. Date, time, and location of the incident
- G. Employee's training

Within 24 hours, a copy of this incident report will be forwarded to the Occupational Health Specialist and Division Health & Safety Manager who will evaluate what follow-up actions should be addressed, including if revisions need to be made to the Exposure Control Plan.

8. RECORDKEEPING

- A. The Occupational Health Specialist will be responsible for establishing and maintaining accurate, confidential workers' compensation medical records for each employee with occupational exposure for the duration of employment plus 30 years in accordance with OSHA 29 CFR 1910.1020 "Access to Employee Exposure and Medical Records".
- B. The Division Health & Safety Manager will be responsible for maintaining the bloodborne pathogens training class records for at least 3 years from the date of training. The records will include the date of the training class, a summary of the class contents, the names of the qualified instructors, and the names and job titles of person attending the training.
- C. Employee medical records will be made available to employees (or their designated representative) with written consent by the employee within 15 working days of request.



Health and Safety Program

Attachment 51-1

**BLOODBORNE PATHOGENS
EXPOSURE CONTROL PLAN**

- D. An exposure incident will be evaluated by the Occupational Health Specialist and Corporate Health & Safety Managers to determine if the case meets OSHA's Recordkeeping Requirements (29 CFR 1904).



Health and Safety Program

Attachment 51-1

**BLOODBORNE PATHOGENS
EXPOSURE CONTROL PLAN**

HEPATITIS B VACCINATION DECLINATION FORM

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccine series at no cost to me.

Name _____

Date _____

Witness _____

Date _____

URS SAFETY MANAGEMENT STANDARD

Drilling Safety Guidelines

1. Applicability

This program applies to URS projects in which truck-mounted, or other engine powered, drill rigs are used. It is applicable to URS employees and URS owned rigs. For drill rigs operated by contractors, the primary responsibility for drilling safety is with the drilling contractor.

2. Purpose and Scope

The purpose of these guidelines is to provide an overview for working safely around drilling operations with truck-mounted and other engine-powered drill rigs. The procedure addresses off-road movement of drill rigs, overhead and buried utilities, use of augers, rotary and core drilling, and other drilling operations and activities.

3. Implementation

Field Activities Drill rig safety and maintenance is the responsibility of the drill rig operator. URS employees are responsible for their own safety including recognizing and avoiding drill rig hazards. URS employees that observe a drill rig condition believed to be unsafe shall advise the drill rig operator of the unsafe condition.

4. Safety Guidelines

A. General Guidelines

URS technicians, geologists, engineers, or other field staff assigned to observe drilling operations or collect soil samples should observe the following guidelines:

- Require a meeting at project start-up regarding the drill rig operator responsibility for rig safety and any site and equipment specific safety requirements
- Set up any sample tables and general work areas for the URS field staff to the side of the drill rig (preferably 10 meters away) and not directly behind the rig.
- URS engineers, technician, and geologists shall not assist the drillers with the drilling equipment or supplies and shall not at any time operate the drill rig controls.

B. Movement of Drill Rigs

Before moving a rig, the operator must do the following:

URS SAFETY MANAGEMENT STANDARD

Drilling Safety Guidelines

- To the extent practical, walk the planned route of travel and inspect it for depressions, gullies, ruts, and other obstacles.
- Check the brakes of the truck/carrier, especially if the terrain along the route of travel is rough or sloped.
- Discharge all passengers before moving on rough or steep terrain.
- Engage the front axle (on 4x4, 6x6, etc. vehicles) before traversing rough or steep terrain.

Driving drill rigs along the sides of hills or embankments should be avoided; however, if side-hill travel becomes necessary, the operator must conservatively evaluate the ability of the rig to remain upright while on the hill or embankment. The possibility must be considered that the presence of drilling tools on the rig may reduce the ability of the rig to remain upright (raises the center of mass of the rig).

Logs, ditches, road curbs, and other long and horizontal obstacles should be normally approached and driven over squarely, not at an angle.

When close lateral or overhead clearance is encountered, the driver of the rig should be guided by another person on the ground.

Loads on the drill rig and truck must be properly stored while the truck is moving, and the mast must be in the fully lowered position.

After the rig has been positioned to begin drilling, all brakes and/or locks must be set before drilling begins. If the rig is positioned on a steep grade and leveling of the ground is impossible or impractical, the wheel of the transport vehicle should be blocked and other means of preventing the rig from moving or topping over employed.

C. Buried and Overhead Utilities

The location of overhead and buried utility lines must be determined before drilling begins, and the locations should be noted on boring plans and/or assignment sheets.

When overhead power lines are close by, the drill rig mast should not be raised unless the distance between the rig and the nearest power line is at least 20 feet (7 meters) or other distance as required by local ordinances, whichever is greater. The drill rig operator or assistant should walk completely around the rig to make sure that proper distance exists.

When the drill rig is positioned near an overhead line, the rig operator should be aware that hoist lines and power lines can be moved towards each other by wind. When necessary and approved by the Project

URS SAFETY MANAGEMENT STANDARD

Drilling Safety Guidelines

Manager (PM), the utility and/or power lines may be shielded, shut down, or moved by the appropriate personnel.

For additional information, please refer to SMS #34 "Utility Clearances and Isolation".

D. Clearing the Work Area

Before a drill rig is positioned to drill, the area on which the rig is to be positioned should be cleared of removable obstacles and the rig should be leveled if sloped. The cleared/leveled area should be large enough to accommodate the rig and supplies.

E. Safe Use of Augers

Never place hands or fingers under the bottom of an auger flight or drill rods when hoisting the augers or rods over the top of another auger or rod in the ground or other hard surfaces, such as the drill rig platform.

Never allow feet to get under the auger or drill rod while they are being hoisted.

When the drill is rotating, stay clear of the drill string and other rotating components of the drill rig. Never reach behind or around a rotating auger for any reason.

Move auger cuttings away from the auger with a long-handled shovel or spade; never use hands or feet.

Never clean an auger attached to the drill rig unless the transmission is in neutral or the engine is off, and the auger has stopped rotating.

Do not wear loose clothing or jewelry while working near the drill rig. Long hair must be pulled back to avoid entanglement with moving parts.

Hearing protection is required when working near an operating drill rig.

F. Safe Use of Hand Tools

Regulations regarding hand tools should be observed in addition to the guidelines provided below:

- Each tool should be used only to perform tasks for which it was originally designed.
- Damaged tools should be repaired before use or discarded.
- Safety goggles or glasses should be worn when using a hammer or chisel. Nearby co-workers and by-standers should be required to wear safety goggles or glasses also, or move away.

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Drilling Safety Guidelines

- Tools should be kept cleaned and stored in an orderly manner when not in use.

G. Safe use of Wire Line Hoists, Wire Rope, and Hoisting Hardware

Safety rules described in Title 29 Code of Federal Regulations (CFR) 1926.552 and guidelines contained in the Wire Rope User's Manual published by the American Iron and Steel Institute shall be used whenever wire line hoists, wire rope, or hoisting hardware are used. The driller should provide written reports (upon request) documenting inspections of equipment.

H. Traffic Safety

Drilling in streets, parking lots or other areas of vehicular traffic requires definition of the work zones with cones, warning tape, etc. and compliance with local police requirements.

I. Fire Safety

- Fire extinguishers (type ABC) shall be kept on or near drill rigs for fighting small fires.
- If methane or other flammable gases or vapors are suspected in the area, a combustible gas indicator (CGI) shall be used to monitor the air near the borehole with all work to stop at 20 percent of the Lower Explosive Limit (LEL).
- Work shall stop during lightning storms.

J. Protective Gear

1. Minimum Protective Gear

Items listed below should be worn by all staff working within 30 feet (10 meters) of drilling activities.

- Hearing Protection;
- Hard Hat;
- Eye Protection (safety glasses, goggles, or face-shield)
- Safety Shoes (shoes or boots with steel toes)

URS SAFETY MANAGEMENT STANDARD

Drilling Safety Guidelines

2. Other Gear

Items listed below should be worn when conditions warrant their use. Some of the conditions are listed after each item.

- **Safety Harnesses and Lifelines:** Safety harnesses and lifelines shall be worn by all persons working on top of an elevated derrick beam or mast. The lifeline should be secured at a position that will allow a person to fall no more than six feet (2 meters). OSHA Fall Protection (1926 Subpart M) requirements apply.
- **Life Vests:** Use for work over water.

5. Resources

- A. International Association of Drilling Contractors Safety Alerts
<http://iadc.org/alerts.htm>
- B. Fall Protection - SMS 040
- C. Hearing Conservation - SMS 026
- D. Subcontractor Health and Safety Requirements - SMS - 046
- E. Utility Clearances and Isolation - SMS 034

URS SAFETY MANAGEMENT STANDARD

Vehicle Safety Program

1. Applicability

This procedure applies to URS Corporation domestic U.S. operations.

2. Purpose and Scope

The purpose of this procedure is to reduce the risk of injury to URS employees and control liability related to vehicle accidents.

This SMS applies to employees operating motor vehicles that are owned, rented or leased by the Company, and the use of personal vehicles while on company business.

This SMS does not apply to heavy equipment operations (see SMS 019).

3. Implementation

The overall responsibility for program implementation is with the URS Health and Safety Director. Other responsibilities include:

Administration - Fleet management, vehicle acquisition, insurance, claims reporting, controlling access to vehicles, maintenance of vehicles, participating on accident review committee.

Human Resources - Documentation of driver's license, discipline.

Health and Safety - Employee safety training, maintenance of the vehicle safety program, participation on the accident review committee.

Employee - Familiarization with URS Vehicle Safety Program, compliance with its requirements.

4. Requirements

A. Authorized Drivers

1. Authorized Drivers are those individuals permitted to drive URS owned, leased, or rented vehicles. Employees that only operate rental cars obtained on a daily basis through URS National Service Agreements are not required to be designated as Authorized Drivers.
2. Must be at least 18 (non-commercial license) or 21 (commercial license) years of age and have a current driver's license for the appropriate class of vehicle (unless more stringent requirements are established by the leasing/renting agency).
3. Human Resources and Office Administrators requires new employees and current employees (on an annual basis), designated as Authorized Drivers, to provide a copy of their driver's license. Authorized drivers who lose their license through legal action must notify their Human Resources

URS SAFETY MANAGEMENT STANDARD

Vehicle Safety Program

Representative immediately. The Human Resources Representative will notify the Fleet Manager.

4. The Company may suspend the privilege to operate vehicles on Company business due to non-compliance with the URS Vehicle Safety Program, involvement in a motor vehicle accident, or motor vehicle violations.
5. Authorized drivers must review the Vehicle Safety Program (SMS 057) and sign the Drivers Information form (Attachment 57-2).
6. Non-URS employees (e.g., subcontractors, alliance partners) may operate URS vehicles only when this activity is specifically agreed to in the applicable contract.

B. Training

1. Authorized Drivers shall be provided basic driver safety training, including a review of the URS Vehicle Safety Program (SMS 057) and video or on-line training, within 6 months of the effective date of this SMS or within 3 months of their hire date.
2. The Accident Review Committee may require additional training for select employees based on accident involvement.

C. General Operating Policy and Procedure (Applies to Authorized and Non-Authorized Drivers Operating Motor Vehicles on Official Company Business)

1. Company owned/rented/leased motor vehicles may be operated only by properly licensed employees who are specifically authorized to drive company vehicles.
2. Authorized drivers required to operate vehicles with special hazards (i.e. trucks carrying fuel cells, vehicles used to tow trailers, vehicles with limited visibility, etc.) shall be thoroughly briefed on the hazards and control measures necessary for safe operation of the vehicle. The local office shall maintain documentation of the briefing.
3. Drivers/operators shall know and obey all federal, state and local motor vehicle laws applicable to the operation of their vehicle.
4. A driver shall not permit unauthorized persons to operate a Company-owned/rented/leased vehicle.
5. URS policy regarding reimbursement and insurance coverage requirements for use of personal automobiles may be found in the Policy and Procedures Manual (Section 074.020).
6. Cell phone use while driving requires use of a hands-free device (e.g., headset or speakerphone), the vehicle must be stopped when the operator performs an activity that requires diverting attention from the operation of the vehicle (i.e. dialing calls).

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Vehicle Safety Program

7. Company owned/rented/leased vehicles are for official business use only and are not to be used for personal activities.
8. Seat belts and shoulder harnesses (occupant restraint systems) shall be worn or used whenever the vehicle is in operation. The vehicle may not move until all passengers have fastened their restraints.
9. When parking or leaving a vehicle, the following procedures must be followed: Shut off the engine, engage the transmission in park (automatic transmission) or first gear (standard transmission), set the parking brake, remove the ignition keys, and lock the vehicle.
10. The vehicle's engine is to be turned off during refueling. Smoking or cell phone use is not allowed while refueling.
11. Drivers/operators will not drive or operate vehicles while under the influence of alcohol or illegal drugs. Further details on the URS Substance Abuse Policy may be found in the Policy and Procedure Manual (section 034.030).
12. Drivers/operators will not drive or operate vehicles while under the influence of medications when told by a physician, another healthcare provider, or the manufacturer (i.e. instructions on the label) that the activity is unsafe.
13. Vehicle operators are responsible for any fines levied by law enforcement agencies for the operation of their vehicles.
14. Articles, tools, equipment, etc. placed in vehicles shall be stored as not to interfere with vision or the proper operation of the vehicle in any way. This also includes preventing items from flying about or out of the vehicle during sudden stops, turning, etc.
15. Trucks or vehicles with obstructed rear-view mirrors must observe the following procedures when backing up: Position an employee to act as a spotter at the rear of the vehicles, in the driver's line of sight, to ensure that the area behind the truck is clear. If no other employee is present, then the driver must step out of the vehicle and check the area behind the vehicle before backing up. As an added precaution, avoid backing up whenever possible.
16. Driver/operators may not deactivate or muffle any backup warning device.
17. All cargo extending 4 feet or more beyond the end of a truck, trailer or similar vehicle shall be clearly marked with a red warning flag or cloth measuring no less than 16 inches square. Red lights must be used at night.

D. Field Site Vehicle Safety

1. Define specific vehicle travel routes and parking areas at field sites. Use fencing, cones or other markings to define roads and parking.
2. If parking on the shoulder of an active road, park as far off the road as possible.

URS SAFETY MANAGEMENT STANDARD **Vehicle Safety Program**

3. If work is required alongside an active road (e.g., surveying) park the vehicle behind the area of work to provide a barrier against out-of-control vehicles.
4. URS will not transport DOT-placard quantities of hazardous materials. However, small quantities of hazardous materials (e.g., sample coolers) may be transported if properly packaged. Be careful to prevent chemical contamination of the vehicle. Further details on DOT shipping may be found in the DOT Shipping SMS 048.
5. Nuclear density meters (e.g., Troxler units) may be transported only by employees who have been trained in the use of nuclear density meters (see SMS 044). Nuclear density meters must be secured from movement and locked during transport. NRC and state-specific regulations regarding transport documentation also apply.
6. When performing fieldwork requiring the blocking of traffic lanes (e.g., bridge inspection), follow URS SMS 032, the Manual on Uniform Traffic Control Devices for Streets and Highways (ANSI D6.1) and local police requirements for barriers, cones, and flaggers.
7. No employee may ride in the bed of a pickup truck unless seating and restraints are provided for this specific use.

E. Accident Response and Reporting

1. In case of injury, call or have someone else call, 9 1 1 immediately for emergency assistance. If you are involved in an accident and are not injured, do the following:
 - a. Protect the accident scene
 - b. Do not admit liability or place any blame for the accident
 - c. Provide only your name, address, driver's license number, and vehicle insurance information.
 - d. Obtain the following:
 - i. name(s), addresses, and telephone number(s) of the owner
 - ii. driver and occupants of other vehicle(s)
 - iii. the owner's insurance company
 - iv. driver's license number
 - v. year, make, model and license number of the vehicle(s)
 - vi. name(s) and addresses of any witnesses
 - e. **DO NOT:**
 - Call the insurance company; the Fleet Manager's office will do this (unless the incident involves your personal vehicle)
 - Give a statement to the press

URS SAFETY MANAGEMENT STANDARD
Vehicle Safety Program

- Give a signed statement to the claims adjuster representing the other driver's insurance company

NOTE: The Auto Claim Report (Attachment 57-1) for Company-leased or owned vehicles is located in the vehicle glove compartment. The driver must complete this form at the scene of the accident and submit it to management.

2. Notification

All accidents with a Company-leased, rented, or owned vehicle must be reported to your Office/Branch Manager/Supervisor and Fleet Manager within 24-hours of the time it occurs. Use the Auto Claim Report (Attachment 57-1) for this purpose. The Fleet Administrator will report the accident to the insurance carrier (leased and owned vehicles only) within 48 hours of when it occurred.

F. Accident Review Committee

1. The Fleet Manager will review all accidents involving URS-owned, rented or leased vehicles. Accidents involving any of the following will result in immediate disciplinary action in coordination with Human Resources:
 - a. Driving under the influence of alcohol or illegal drugs
 - b. Reckless driving
 - c. Driving without a license
 - d. Hit-and-run driving
 - e. Repeat accidents involving the same employee,
 - f. Unauthorized use of company vehicles.
2. Disciplinary action includes possible:
 - a. Loss of URS driving privileges
 - b. Additional driver safety training
 - c. Suspension without pay
 - d. Termination
3. The Accident Review Committee will review those accidents referred by the Fleet Manager or by employees appealing disciplinary action.
4. The Accident Review Committee will include one representative from each of the following:
 - a. Corporate Administration
 - b. Corporate Health and Safety
 - c. Corporate Human Resources
 - d. Operations

URS SAFETY MANAGEMENT STANDARD **Vehicle Safety Program**

G. Inspection

1. The driver is responsible for inspecting the vehicle prior to use and not driving a vehicle with obvious safety defects.
2. Basic safety checks must include:
 - a. Tire condition/pressure
 - b. Lights/turn signals
 - c. A clean windshield and adequate window washer fluid
 - d. Gauges/warning lights indicating a normal condition
 - e. Mirrors properly adjusted
 - f. Brakes with adequate pedal pressure for proper braking
3. Any defects must be reported to the local office Fleet Representative/Office Administrator.

H. Vehicle Maintenance

1. The Office Administrator (or designee) is to ensure that all URS-leased/owned vehicles are properly maintained.
2. Routine maintenance must be performed in accordance the schedule provided in the owner's manual stored in the vehicle.
3. Reported defects/problems with vehicles must be repaired promptly.

5. Documentation Summary

- A. Auto Claim Report - (Attachment SMS 57-1)
- B. Driver's Information - (Attachment SMS-57-2)

6. References

The following sites provide additional information to assist you:

- A. National Safety Council; Information on Defensive Driving Courses
<http://www.nsc.org/psg/ddc.htm>
- B. AAA Foundation for Traffic Safety
<http://www.aaafoundation.org/>



Health and Safety Program

Attachment 57-1

AUTO CLAIM REPORT

To be used for all vehicle accidents involving URS-leased/rented/owned vehicles
and for personal vehicles used on company business.

Name of Employee Involved in Accident _____

Office Location _____

Contact Person _____

Phone Number _____

Fax Number _____

Company Vehicle ☐ On Company business at the time of accident? Yes ☐ No ☐
Personal Vehicle ☐ Vehicle Identification Number (company or personal):
Rental Vehicle ☐

Year _____ Make _____ Model _____

Other Driver's Information

Name _____ Phone Number _____

Address _____

Description of Accident

Date of Accident _____ Police Report # _____

Location of Accident _____ Police Department _____

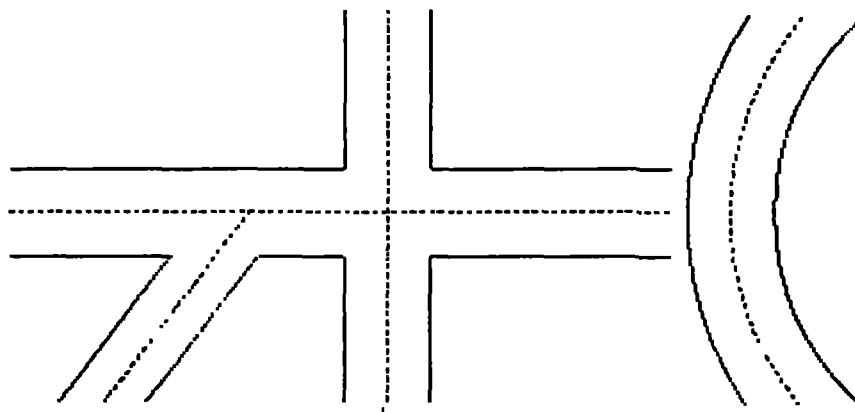
Description (provide a clear, inclusive description of the accident):

Accidents should be reported immediately to the Office Administrator who will then forward the information to:

ALL ACCIDENTS WILL BE REPORTED TO:
URS Corporation
Kay Tenuta in the Tampa, FL. Office.
813-636-2196, 813-636-2111 (Fax)

AUTO CLAIM REPORT

Draw a diagram showing the position of vehicles before and after the accident. Correct the diagram to fit your situation.



Check all applicable conditions on each subject

WEATHER

- ☐ Clear
- ☐ Cloudy
- ☐ Fog
- ☐ Rain
- ☐ Snow
- ☐ Sleet
- ☐ Other

LIGHTING

- ☐ Daylight ☐ Dark
- ☐ Dusk ☐ Dawn
- ☐ Dark - no street lights on
- ☐ Dark - street lights on
- ☐ Headlights
- ☐ Headlights on dim
- ☐ Headlights on bright
- ☐ No lights on

ROAD SURFACE

- ☐ Dry
- ☐ Wet
- ☐ Muddy
- ☐ Snowy
- ☐ Snow-covered
- ☐ Ice in places
- ☐ Ice-covered
- ☐ Other

ROAD DESCRIPTION

- ☐ Straight ☐ Curve
- ☐ Level
- ☐ Hill ☐ Up ☐ Down
- ☐ Paved ☐ Black top
- ☐ One-way
- ☐ Two-way
- ☐ Divided road
- ☐ Intersection

ACTION OF DRIVER

You Other

Exceeding safe speed		
On wrong side of street		
Did not have right-of-way		
Disobeyed traffic signal		
Passed illegally		
Improper turning		
Improper backing		
Following too closely		
Failure to signal		
Improper lane change		
Misjudged clearance		
Other		

What was speed limit?

MPH

Witnesses?

☐ Yes ☐ No

Witness Name

Address

Name

Address

Traffic control

- ☐ Signal lights
- ☐ Caution lights
- ☐ Stop sign
- ☐ Police officer
- ☐ None ☐ Other



DRIVERS INFORMATION

Attachment 57-2

Policy

All Company employees who operate a vehicle on company business must comply with the URS Vehicle Safety Program (SMS 57).

License

I authorize URS or its agents to verify any driving information necessary to determine if I meet the Acceptable Driving Criteria, as established in the Safety Program, and the requirements of Section 391.23 of the Federal Motor Carrier Safety Regulations.

I agree to notify URS Administration immediately if my driver's license is suspended or revoked.

Please Print Legibly

Name _____ Social Security Number _____

License Number _____ State _____ Class _____

Employee Signature _____ Date _____

If you, the prospective employee, do not have a current valid driver's license, withhold the above information, or do not meet the Company's Acceptable Driving Criteria, you will not be allowed to drive any Company vehicles or to drive your own vehicle on Company business.

(Attach the applicant's driver's license to this space and photocopy this sheet. All information on the license must be legible after photocopying.)

ATTACHMENT B
SAFETY PLAN DOCUMENTATION

EMERGENCY RESPONSE CHECKLIST

<u>In an Emergency</u>	<u>Yes</u>	<u>No</u>
Confirm the reported incident	_____	_____
Evacuate and secure the area	_____	_____
Render first aid/emergency medical care	_____	_____
Notify promptly:		
Project Manager	_____	_____
Fire Department	_____	_____
Police Department	_____	_____
Nearest Hospital or Medical Care Facility	_____	_____
Start Documentation	_____	_____
If spill or leak occurs:		
Don the proper PPE	_____	_____
Stop the source	_____	_____
Contain the spill	_____	_____
Clean up the spill	_____	_____
Upon evacuating, take attendance at the assembly area	_____	_____
Authority given:		
Leave the site	_____	_____
Restart the operations	_____	_____
Debrief and document the incident	_____	_____
A copy of the document submitted to the HSM	_____	_____

**SAFETY PLAN COMPLIANCE AGREEMENT AND
MEDICAL EMERGENCY CONTACT SHEET**

I, _____, have received a copy of the Health and Safety Plan for this Project. I have reviewed the plan, understand it, and agree to comply with all of its provisions. I understand that I could be prohibited from working on the project for violating any of the health and safety requirements specified in the plan.

SIGNED: _____
Signature Date

Firm: URS Corp.

This brief Medical Emergency Contact Sheet will be kept in the Support Zone during site operations. It is in no way a substitute for the Medical Surveillance Program requirements of the URS Health and Safety Program. This data sheet will accompany injured personnel when medical assistance or transport to hospital facilities is necessary.

Emergency Contact: _____ Phone #: _____

Relationship: _____

Do you wear contact lenses? _____

ATTACHMENT C
MATERIAL SAFETY DATA SHEETS

To reduce printing costs and simplify the document review process, Material Safety Data Sheets have been excluded from the draft version of this SHERP. All applicable MSDSs will be included in the final version of the report.